Permit to Construct Application
Facility ID 067-0042

DOUBLE L
307 Warm Springs Way
Heyburn, Idaho, 83336

Prepared for:

Idaho Department of Environmental Quality
Air Quality Division
1410 N. Hilton
Boise, Idaho 83706

December 2nd, 2013

Idaho Department of Environmental Quality
Boise, ID 83706-1255
State Fiscal Office

Cash Receipt

Date	Receipt No.
11/25/2013	10576

Customer Billing Address
DOUBLE L JAMES KEARL 307 WARM SPRINGS WAY HEYBURN, ID 83336

RECEIVED FROM

LOG #	
FACILITY/PERMIT	
PHONE #	
Payment Method	Check
Check No.	11916

Item	Description	Amount
APP FEE	PTC APPLICATION FEE	1,000.00

Total $1,000.00

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1.0 INTRODUCTION

This document contains the following sections that will serve to meet the Idaho Department of Environmental Quality (DEQ) request for a Permit to Construct application as provided in Idaho Administrative Procedures Act (IDAPA) 58.01.01.221for Double L Manufacturing (Double L) located in Heyburn, Minidoka County, Idaho. Section 2.0 provides facility information, presents a process description, identifies emissions units, and provides a summary of potential to emit (PTE) emissions from the facility. PTC forms, manufacturer data sheets and material safety data sheets are provided in Appendices A through D. A plot plan is provided in Appendix E.

2.0 FACILITY INFORMATION

Double L is a design and manufacturing facility located at 307 Warm Springs Way in Heyburn, Idaho, Minidoka County. Double L (SIC Code 3523) specializes in designing and manufacturing farm machinery and harvesting equipment. The facility is generally located at Universal Transverse Mercator (UTM) coordinates 270,902 meters (m) east and 4,717,423 m North [North American Datum (NAD) 83)], Zone 12. Operational design and facility capacity currently limits Double L to a single shift which operates 10 hours a day, five days a week and 52 weeks per year (2,600 hours). Figure 2-1 provides a facility layout of Double L. Figure 2-2 provides an aerial view of Double L's location.

2.1 PROCESS DESCRIPTION

Double L designs and repairs farm machinery and harvesting equipment at this location. The manufacturing process involves painting of equipment, welding and intermittent hand grinding and the use of abrasive media to prepare metals for painting. The primary source of emissions comes from the combustion of natural gas. The criteria pollutants expected as a result of this project include particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers ($PM_{2.5}$), particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (PM_{10}), sulfur dioxide (SO_2), nitrogen dioxide (NOx), volatile organic compounds (VOCs), carbon monoxide (CO) and lead (Pb). Emissions of metals, HAPS and TAPs are also expected from the combustion of natural gas, from painting, welding, and from grinding. A more detailed description of Double L's processes is described below.

2.1.1 WELDING

Double L uses Gas Metal Arc Welding (GMAC) (Also known as Metal Inert gas Welding (MIG) to repair equipment. Descriptions of GMAC are available at AP-42 Chapter 12.19 Electric Arc Welding and can be accessed at http://www.epa.gov/ttnchie1/ap42/ch12/final/c12s19.pdf.

Double L welds base material inside the North Bay of the facility. Welding activities generate fugitive emissions which are not vented to any exhaust stacks. To control fugitive welding emissions, Double L installed and continuously operates four (4) Clark Air Rotation Systems, Model DH10000V within the North Bay of the building. Each Clark Air Rotation System is fitted with a 2-Stage filter system. Initial pocket filters are 92 percent efficient in capturing particles 3 microns or larger. Particulates then pass through a second filter which is 98 percent efficient in capturing particles 1 micron in size. Each Clark Air Rotation System has an air flow capacity of 10,000 Cubic Feet per Minute (CFM) and creates fifteen (15) air changes per hour to remove fume contaminants.

Welding emissions are captured, filtered and are re-circulated back into the welding bay. The Clark Air Rotation Systems minimize exposure to particulate fumes and maintain the concentrations of contaminants below OSHA and EPA permissible exposure levels. Double L does not have industrial roll-up or sliding doors. Double L utilizes a regular man door which according to Double L remains closed during welding. Particulate welding emissions were calculated using emission factors found in AP-42, Chapter 12.19 Electric Arc Welding. Emissions of TAPs and HAPs were calculated using the percent weight of material as found in the Material Safety Data Sheets. Material Safety Data Sheets for welding are provided in Appendix C. Double L utilizes ProStar S6-ER70S-6 welding wire. Due to operational limitations, Double L's maximum welding wire usage is 11 pounds per hour at 10 hours per day. Double L is requesting a maximum annual usage of 28,072 lb/yr of welding wire. Welding emissions are provided in Appendix B (on Compact Disk).

2.1.2 GRINDING

Double L also utilizes hand-held grinders to prepare metals for painting. Grinding is intermittent and is conducted in the middle of the welding bay near the Clark Air Rotation Systems. Particles from the grinding process are larger than PM_{10} and settle on the floor near the grinding machines. Once grinding has stopped, particles are vacuumed-up and are disposed of. Particles that do not settle on the floor are captured and filtered through the Clark Air Rotation Systems. Double L has visually inspected the grinding process and has concluded that no grinding particles leave the building. Therefore grinding particulate emissions are considered insignificant and are not considered an emission source. However, TAP emissions generated from hand-held grinders have been included in the facility-wide TAP analysis. Emissions of TAPs and HAPs were calculated using the percent weight of material in Material Safety Data Sheets. Material Safety Data Sheets for grinding are provided in Appendix C. It is conservatively estimated that a grinding wheel weighs one pound. Due to operational limitations, Double L's maximum grinding usage is 10 wheels per hour or 10 pounds per hour at 10 hours per day.

2.1.3 ABRASIVE BLAST BOOTH

Double L utilizes a fully enclosed Spray-Line SL-BR-264415-DT Blast Booth with recyclable steel shot media to prepare metals for painting. To automate the media recovery and cleaning process, Double L utilizes a Clemco Industries Belt Conveyor and Abrasive Recovery System which is inside the blast booth. To control particulate emissions during blasting, Double L installed and operates two (2) Envirosystems AW160HD Industrial Dust Collector Air Wall Filtration units. Each side of the blast booth will have one (1) Industrial Dust Collector Air Wall Filtration unit.

Each Industrial Air Wall Filtration Unit contains thirty (30) cellulose/polyester media filters. According to Envirosystems test data, each air wall filtration unit has a filter capture efficiency of 98.8 percent for particles 0.5 microns in size, 99.9 percent for particles 1.0 micron in size and 100 percent capture efficiency for particles 2.0 microns or greater. During blasting, particulate emissions are not vented outside the building. Instead, emissions are captured and filtered through the Industrial Dust Collector Air Wall Filtration units and clean air is then recycled back into the adjacent work area. The Industrial Dust Collector Air Wall Filtration units minimize exposure to dust and maintains the concentrations of contaminants below OSHA and EPA permissible exposure levels. No emissions leave the building. Therefore, abrasive blasting is not considered an emission source. Manufacturer equipment and filter capture efficiency data is provided in Appendix D.

2.1.4 PAINT BOOTH

Double L utilizes an enclosed Spray-Line Semi-Down Draft 264417 Spray Booth located in the west wing of the building. Paint is transferred via a Graco 395 Ultra Electric Airless Sprayer to Graco FTx Contractor Model 238350 Series A spray gun. The spray gun have a transfer efficiency of 65 percent. Particulate emissions from painting are vented through two (2) exhaust stacks. Particulate from these stacks is controlled by a 22 gram fiberglass paint arrestor filters with a filter capture efficiency of 99.03 percent. Less than 1 percent of particulate emissions are vented to the atmosphere. Paint exhaust filters have a dimension of 20" x 20" x 2.5". Particulate matter is conservatively assumed $PM_{10} = PM_{2.5}$. VOCs were calculated by taking the paint with the highest VOC content and particulate matter was calculated by taking the paint with the highest solid content. Material Safety Data Sheets for coating are provided in Appendix C. Manufacturer's equipment and exhaust filter data is provided in Appendix D.

Due to operational limitations, Double L's maximum paint usage is 5 hours per day and maximum primer usage is 1 hour per day.

2.1.5 NATURAL GAS COMBUSTION

Double L utilizes one Bananza Model B4000 natural gas-fired heater to dry equipment after painting. The Bananza B4000 blends the outside air directly with a 30:1 fully modulating Maxon gas burner. The Bananza B4000 and spray booth work together as a self-contained system. The exhaust fans on the spray booth draw in heated air and heat the spray booth. Emissions from the paint booth heater are vented from the same, two exhaust stacks from the painting booth which achieve 99.03 percent particulate control. The total rated heat input capacity for this heater is 5,130,000 Btu/hr (5.13 MMBtu/hr).

The three Renzor UDAS natural gas-fired heaters are each rated at 200,000 Btu/hr. The three natural gas-fired GTC-480MD Thermo-Cyclers are each rated at 550,000 Btu/hr and the eight natural gas-fired Carrier Furnaces have a rating of 60,000 Btu/hr, 100,000 Btu/hr, 120,000 Btu/hr and 140,000 Btu/hr respectively. The total rated heat input capacity of the Carrier Furnaces is 900,000 Btu/hr. The total rated heat input capacity for Double L is 8,280,000 Btu/hr (8.28 MMBtu). Emissions from the combustion of natural gas were calculated utilizing EPA AP-42-emission factors for nitrogen oxides and carbon monoxide (Table 1.4-1), emission factors for criteria pollutants (Table 1.4-2) and emission factors for metals (Table 1.4-4). Greenhouse gas emissions from the combustion of natural gas were calculated utilizing emission factors from the California Climate Action Registry-General Reporting Protocol version 2.2, March 2007. Operational design and capacity currently limits Double L to a single shift which

operates 10 hours a day, five days a week and 52 weeks per year (2,600 hours). Due to operational and capacity limitations, Double L is requesting a natural gas usage limitation of 3,000 hours per year. Manufacturer data sheets for combustion equipment are provided in Appendix D.

2.2 SUMMARY OF EMISSION UNITS

The following emissions units are included in the Permit for Exemption Application:

- 3 Reznor UDAS Natural Gas-Fired Space Heaters, combined 600,000 Btu/hr;
- 8 Carrier Natural Gas-Fired Furnaces, combined 900,000 Btu/hr;
- 3 Thermo-Cycler Natural Gas-Fired Air Handling Units, combined 1,650,000 Btu/hr;
- 1 Spray-Line Semi-Down Spray Booth (Filter Capture Efficiency 99.03%);
- 1 Bananza Model B4000, 5,130,000 Natural Gas-Fired Paint Booth Heater;
- 1 Sprayline SL-BR-264415-DT Blast Booth; 98.8 percent efficient for particles 0.5 microns in size, 99.9 percent efficient for particles 1.0 micron in size and 100 percent capture efficiency for particles 2.0 microns or greater;
- Welding (Particulate, HAPs and TAPs)
- Hand Grinding (TAPs only)

2.3 SOURCE DESIGNATION

Double L is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore in accordance with 40 CFR 52.21(a)(2), Prevention of Significant Deterioration (PSD) requirements are not applicable to Double L. Double L is not a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a), and does not have facility-wide emissions of any criteria pollutant that exceed 250 tons per year (tpy).

Facility wide emissions from LCM do not have the potential to emit (PTE) greater than 100 tpy for PM_{10}, $PM_{2.5}$, SO_2, CO, NO_2, or VOC, therefore Double L will be categorized as a synthetic minor stationary source. Emissions of Hazardous Air Pollutants (HAPs) will not exceed the major source thresholds of 10 tpy for a single HAP or 25 tpy for all HAPs combined, therefore the Double L will also be a minor source of HAP emissions. Since the PTE for all criteria pollutants will be below 100 tpy and the facility will not be a major source of HAPs, Double L will not be subject to Tier I or Title V permitting in accordance with IDAPA 58.01.01.006.113.

2.4 EMISSION ESTIMATES

Controlled and uncontrolled Potential to Emit (PTE) calculations have been prepared for Double L. PTE emission estimates were prepared for regulated criteria pollutant, greenhouse gas as well as applicable HAPs and TAPs. PTE emission estimates were derived from utilizing Material Safety Data Sheets as well as EPA AP-42 emission factors. Detailed emissions calculations for Double L are provided on compact disk and have been provided with this permit application. Additionally, for TAPs, the facility-wide emissions are compared to screening emission levels (ELs). Modeling may be required for those TAPs with emissions that are equal to or greater than their respective ELs. Applicable TAP ELs emitted at Double L are shown in Table 1-2.

3.0 AIR QUALITY IMPACT ANALYSIS

This section describes the technical approach to determine if an air quality impact analysis for Double L is warranted. DEQ has recently re-evaluated the extent of air dispersion modeling needed for facilities for which facility-wide emissions of most or all criteria pollutants are less than Below Regulatory Concern (BRC) levels specified in IDAPA 58.01.01, Section 221.02. As provided in Table 1-1 facility-wide criteria pollutants are BRC and as shown in Table 1-2, respective TAPs are below their ELs, therefore air dispersion modeling for these pollutants is not required.

TABLE 1-1

Double L PTE Compared to BRC Levels

Criteria Pollutant	Significant Emission Rate (T/yr)	Emission Rate Below Regulatory Concern (T/yr)	Facility PTE (T/yr)	PTE Greater Than BRC
PM10	15	1.5	0.26	NO
PM2.5	10	1.00	0.26	NO
CO	100	10	1.0	NO
NOx	40	4.00	1.22E+00	NO
SO2	40	4.00	7.31E-03	NO
Lead	0.6	0.06	4.041E-05	NO
Ozone (VOC)	40	4.00	23.1	YES [1]

[1] Ozone modeling is conducted an air shed basis; photochemical modeling for VOC emissions is not required for individual minor sources.

Table 1-2
Screening Emission Levels and Total Projected TAP Emissions (lbs/hr)

Toxic Air Pollutants (TAPs)			Exceeds EL/ Modeling Required
PAH HAPs	**lb/hr**	**EL (lb/hr)**	
Ethylbenzene	0.01	29	No
Cumene	0.36	16.3	No
Trimethylbenzenes [1]	2.96	8.3	No
Toluene	0.85	25	No
Xylene	0.26	29	No
Methanol	0.06	17.3	No
Acetone	0.31	118	No
2-Butoxyethyl Acetate	0.01	8.33	No
Carbon Black	0.08	0.23	No
Methyl Isobutyl Ketone	9.44E-04	13.7	No
n-Butyl Acetate	1.51E-03	47.3	No
Amorphous Precipitated Silica	9.44E-05	0.667	No
Calcium Carbonate	0.01	0.667	No
Zinc Oxide Fume	2.83E-04	0.333	No
Chromium	1.18E-05	3.30E-02	No
Copper	1.17E-05	1.30E-02	No
Manganese	5.08E-05	6.70E-02	No
Nickel	6.17E-06	2.70E-05	No
Silicon	2.38E-05	6.67E-01	No
Aluminum Oxide	7.92E-03	6.67E-01	No
Zirconium Compounds	6.67E-03	3.33E-01	No
Kaolin	4.17E-04	1.33E-01	No
Crystalline Silica (Quartz)	8.33E-05	6.70E-03	No
Magnesium Oxide	4.17E-04	6.67E-01	No
Iron Oxide	4.17E-04	3.33E-01	No
Fluoride Compounds	1.25E-03	1.67E-01	No
2-Methylnaphthalene	6.67E-08	9.10E-05	No

Table 1-2 (continued) Screening Emission Levels and Total Projected TAP Emissions (lbs/hr)			
Toxic Air Pollutants (TAPs)			**Exceeds EL/ Modeling Required**
PAH HAPs	**lb/hr**	**EL (lb/hr)**	
3-Methylchloranthrene	5.00E-09	2.50E-06	No
Acenaphthene	5.00E-09	9.10E-05	No
Acenaphthylene	5.00E-09	9.10E-05	No
Anthracene	6.67E-09	9.10E-05	No
Benzo(a)anthracene	5.00E-09	9.10E-05	See POM
Benzo(a)pyrene	3.34E-09	2.00E-06	See POM
Benzo(b)fluoranthene	5.00E-09		See POM
Benzo(g,h,i)perylene	3.34E-09	9.10E-05	No
Benzo(k)fluoranthene	5.00E-09		See POM
Chrysene	5.00E-09		See POM
Dibenzo(a,h)anthracene	3.34E-09		See POM
Dichlorobenzene	3.34E-06	9.10E-05	No
Fluoranthene	8.34E-09	9.10E-05	No
Fluorene	7.78E-09	9.10E-05	No
Indeno(1,2,3-cd)pyrene	5.00E-09		See POM
Naphthalene	4.95E-06	3.33	No
Naphthalene (as carcinogen)	1.70E-06	9.10E-05	No
Phenanathrene	4.73E-08	9.10E-05	No
Pyrene	1.39E-08	9.10E-05	No
Polycyclic Organic Matter (POM) 7-PAH Group	3.17E-08	2.00E-06	No
Benzene	5.84E-06	8.00E-04	No
Formaldehyde	2.18E-04	5.10E-04	No
Hexane	1.46E-02	12	No
7,12-Dimethylbenz(a)anthracene	1.30E-07		
Butane	1.70E-02		
Ethane	2.52E-02		
Pentane	2.11E-02	118	No

Table 1-2 (continued) Screening Emission Levels and Total Projected TAP Emissions (lbs/hr)			
Toxic Air Pollutants (TAPs)			**Exceeds EL/ Modeling Required**
PAH HAPs	**lb/hr**	**EL (lb/hr)**	
Propane	1.30E-02		
Arsenic	5.56E-07	1.50E-06	No
Barium	3.57E-05	0.033	No
Beryllium	3.34E-08	2.80E-05	No
Cadmium	3.06E-06	3.70E-06	No
Cobalt	6.82E-07	0.0033	No
Mercury	2.11E-06	0.003	No
Molybdenum	1.37E-05	0.333	No
Selenium	1.95E-07	0.013	No
Vanadium	1.87E-05	0.003	No
Zinc Metal	8.02E-04	0.667	No
Iron Salts	2.86E-04	0.067	No
Silicon Carbide	7.92E-03	0.667	No
Calcium Sulfate	4.17E-04	0.667	No
Barium (Soluble Compounds)	1.25E-03	0.033	No
Zinc Oxide Fume	2.37E-03	0.333	No

Figure 2-1

Double L Layout

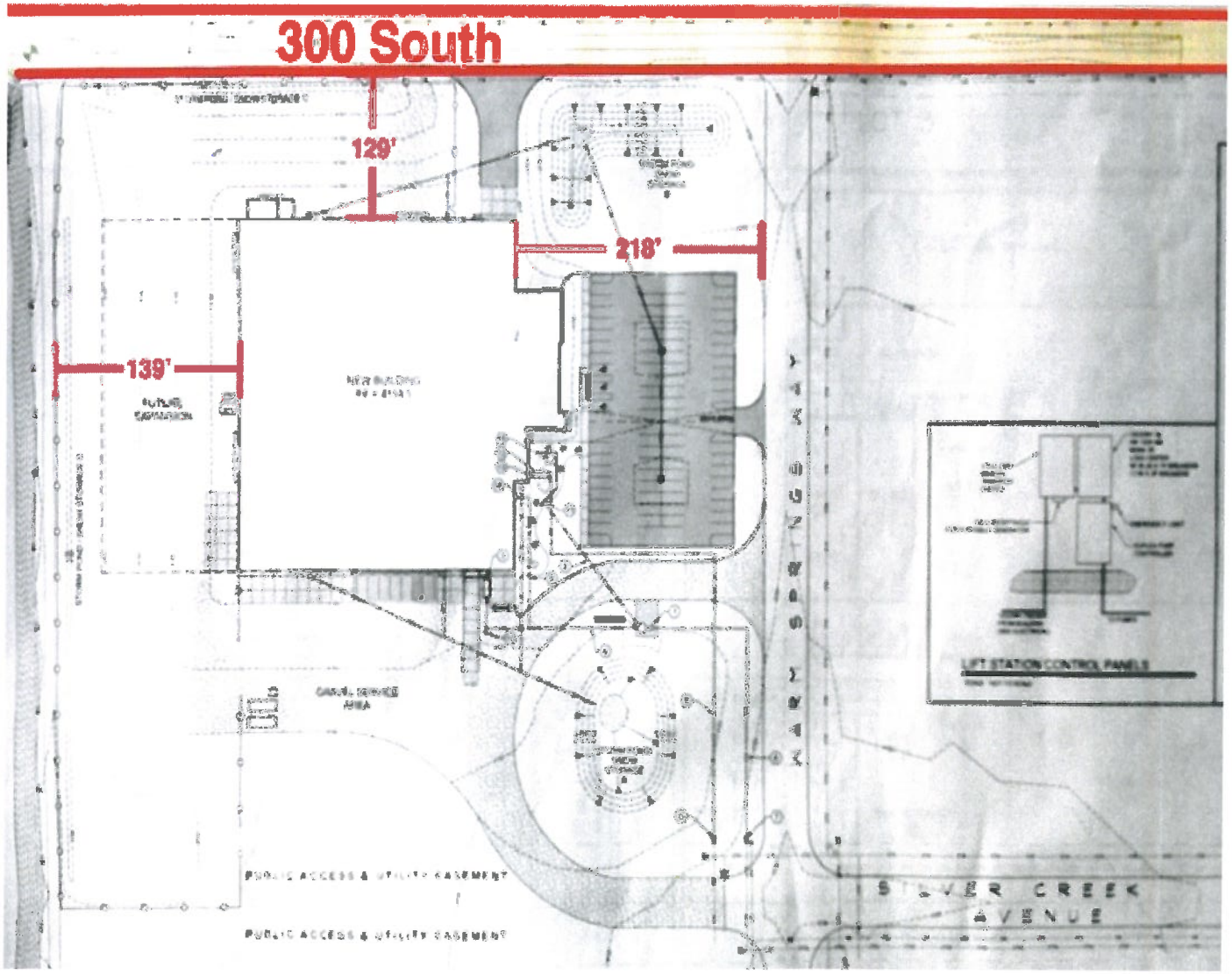

Figure 2-2

Double L Location

4.0 REGULATORY ANALYSIS

A regulatory analysis was performed for Double L to determine the applicability of state and federal air quality regulations. The regulatory applicability determinations are included in this section. As described below, the sources comply with EPA Code of Federal Regulations (CFR). The facility will also comply with all applicable Idaho air quality regulations in Idaho Administrative Procedure Act (IDAPA) 58.01.01.

Federal Regulations

New Source Review (NSR) and Prevention of Significant Deterioration (PSD) Applicability, 40 CFR Parts 51 and 51

In accordance with EPA and IDAPA 58.01.01.205 rules, the proposed facility will not be required to submit a construction permit application subject to the requirements of New Source Review (NSR) as the facility is not a major new source.

Greenhouse Gas Reporting Program (GHGRP), 40 CFR Part 98

On November 8, 2010, EPA signed a rule that finalized greenhouse gas (GHG) reporting requirements. Facilities must report GHG emissions if they meet the definition of one of the identified industry segments and emits 25,000 Metric Tons (MT) CO2e (CO2 equivalent) or more per year in combined GHG emissions.

An air emission inventory for GHGs was performed for Double L and was estimated to emit approximately 1,457 metric tons per year of CO2e. This value would be considered the potential to assuming the facility operated 3,000 hours per year. An air emission inventory for GHGs was performed for Double L and was estimated to emit approximately 4,255 metric tons per year of CO2e. This value would be considered the potential to assuming the facility operated 8,760 hours per year.

Double L is not subject to the GHG reporting program of 40 CFR Part 98 because facility emissions are less than 25,000 metric tons per year. A copy of the emission estimate is included with this permit application.

Greenhouse Gas Tailoring Rule

On May 13, 2010, EPA issued a final rule that establishes an approach to addressing greenhouse gas emissions from stationary sources under the Clean Air Act (CAA) permitting programs. This final rule sets thresholds for GHG emissions that define when permits under NSR, PSD and Title V Operating Permit programs are required for new and existing facilities. This rule "tailors" the requirements of these CAA permitting programs to limit which facilities will be required to obtain PSD and Title V permits.

Beginning July 1, 2011, the PSD major source threshold of 1000,000 tons per year CO2e became effective. A new source with potential GHG emissions above 100,000 tons per year CO2e is now subject to PSD permitting requirements for GHGs, regardless of whether PSD is also triggered for non-GHG pollutants. Modifications to existing major sources that result in an increase of GHG emissions by 75,000 tons per year CO2e or more are subject to PSD permitting requirements for GHGs. Therefore, beginning

July 1, 2011, PSD for GHG pollutants can be triggered regardless of whether PSD is also triggered for non-GHG pollutants. In addition, beginning July 1, 2011, facilities with potential CO2e emissions of 100,000 tons per year or more are subject to Title V permitting requirements.

For determining PSD or Title V major source or major modification applicability, the quantity of GHGs emitted must not only equal or exceed 100,000 tons per year threshold on a CO2e basis, but the sum of emissions of each GHG pollutant not adjusted for its global warming potential must also exceed the applicable threshold for non-GHG regulated pollutants (i.e., 100 tons per year for Title V or 100 tons per year/250 tons per year for PSD, depending on whether the source is on the list of 28 PSD categories or a designated facility as defined in IDAPA 58.01.01.006.26v).

As the total facility CO2e is 1,457 tons per year, the facility is not subject to PSD or Title V operating permit programs with respect to the GHG Tailoring Rule at this time.

National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 61

Double L is not subject to any NESHAP requirements pursuant to 40 CFR Part 61.

Standards of Performance for New Stationary Sources, 40 CFR Part 60

Double L is not subject to any NSPS requirements pursuant to 40 CFR Part 60.

Compliance Assurance Monitoring, 40 CFR Part 64

The Compliance Assurance Monitoring (CAM) rule, 40 CFR Part 64 applies to each Pollutant Specific Emissions Unit when it is located at a major source that is required to obtain Title V, Part 70 or 71 permit.

Double L is not a major source nor will the facility obtain a Title V, Part 70 or 71 operating permit. Therefore, the CAM rule is not applicable to Double L.

National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 63

Part 63 National Emission Standards for Hazardous Air Pollutants (NESHAP) apply both to major sources of HAPs, defined as PTE equal to or greater than 10 tons per year for any single HAP or PTE equal to or greater than 25 tons per year for total HAP, and area sources of HAPs, defined as any stationary source of HAPs that is not a major source.

HAP emissions are below major source thresholds, Double L is not a major source of HAPs. However, the facility is an area source of HAPs.

National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 63 Subpart JJJJJJ (NESHAP for Industrial, Commercial, and Institutional Boilers Area Sources)

Source: 76 FR 15591, Mar. 21, 2011, as amended at 78 FR 7506, Feb. 1, 2013

§63.11193 Am I subject to this subpart?

You are subject to this subpart if you own or operate an industrial, commercial, or institutional boiler as defined in §63.11237 that is located at, or is part of, an area source of hazardous air pollutants (HAP),as defined in §63.2, except as specified in §63.11195.

§63.11194 What is the affected source of this subpart?

(a) This subpart applies to each new, reconstructed, or existing affected source as defined in paragraphs (a)(1) and (2) of this section.

(1) The affected source of this subpart is the collection of all existing industrial, commercial, and institutional boilers within a subcategory, as listed in §63.11200 and defined in §63.11237, located at an area source.

(2) The affected source of this subpart is each new or reconstructed industrial, commercial, or institutional boiler within a subcategory, as listed in §63.11200 and as defined in §63.11237, located at an area source.

(b) An affected source is an existing source if you commenced construction or reconstruction of the affected source on or before June 4, 2010.

(c) An affected source is a new source if you commenced construction of the affected source after June 4, 2010, and the boiler meets the applicability criteria at the time you commence construction.

(d) An affected source is a reconstructed source if the boiler meets the reconstruction criteria as defined in §63.2, you commenced reconstruction after June 4, 2010, and the boiler meets the applicability criteria at the time you commence reconstruction.

(e) An existing dual-fuel fired boiler meeting the definition of gas-fired boiler, as defined in §63.11237, that meets the applicability requirements of this subpart after June 4, 2010 due to a fuel switch from gaseous fuel to solid fossil fuel, biomass, or liquid fuel is considered to be an existing source under this subpart as long as the boiler was designed to accommodate the alternate fuel.

(f) If you are an owner or operator of an area source subject to this subpart, you are exempt from the obligation to obtain a permit under 40 CFR part 70 or part 71 as a result of this subpart. You may, however, be required to obtain a title V permit due to another reason or reasons. *See* 40 CFR 70.3(a) and (b) or 71.3(a) and (b). Notwithstanding the exemption from title V permitting for area sources under this subpart, you must continue to comply with the provisions of this subpart.

§63.11195 Are any boilers not subject to this subpart?

The types of boilers listed in paragraphs (a) through (k) of this section are not subject to this subpart and to any requirements in this subpart.

(a) Any boiler specifically listed as, or included in the definition of, an affected source in another standard(s) under this part.

(b) Any boiler specifically listed as an affected source in another standard(s) established under section 129 of the Clean Air Act.

(c) A boiler required to have a permit under section 3005 of the Solid Waste Disposal Act or covered by subpart EEE of this part (e.g., hazardous waste boilers), unless such units do not combust hazardous waste and combust comparable fuels.

(d) A boiler that is used specifically for research and development. This exemption does not include boilers that solely or primarily provide steam (or heat) to a process or for heating at a research and development facility. This exemption does not prohibit the use of the steam (or heat) generated from the boiler during research and development, however, the boiler must be concurrently and primarily engaged in research and development for the exemption to apply.

(e) A gas-fired boiler as defined in this subpart.

(f) A hot water heater as defined in this subpart.

(g) Any boiler that is used as a control device to comply with another subpart of this part, or part 60, part 61, or part 65 of this chapter provided that at least 50 percent of the average annual heat input during any 3 consecutive calendar years to the boiler is provided by regulated gas streams that are subject to another standard.

(h) Temporary boilers as defined in this subpart.

(i) Residential boilers as defined in this subpart.

(j) Electric boilers as defined in this subpart.

(k) An electric utility steam generating unit (EGU) covered by subpart UUUUU of this part.

§63.11196 What are my compliance dates?

(a) If you own or operate an existing affected boiler, you must achieve compliance with the applicable provisions in this subpart as specified in paragraphs (a)(1) through (3) of this section.

(1) If the existing affected boiler is subject to a work practice or management practice standard of a tune-up, you must achieve compliance with the work practice or management practice standard no later than March 21, 2014.

(2) If the existing affected boiler is subject to emission limits, you must achieve compliance with the emission limits no later than March 21, 2014.

(3) If the existing affected boiler is subject to the energy assessment requirement, you must achieve compliance with the energy assessment requirement no later than March 21, 2014.

(b) If you start up a new affected source on or before May 20, 2011, you must achieve compliance with the provisions of this subpart no later than May 20, 2011.

(c) If you start up a new affected source after May 20, 2011, you must achieve compliance with the provisions of this subpart upon startup of your affected source.

(d) If you own or operate an industrial, commercial, or institutional boiler and would be subject to this subpart except for the exemption in §63.11195(b) for commercial and industrial solid waste incineration units covered by 40 CFR part 60, subpart CCCC or subpart DDDD, and you cease combusting solid waste, you must be in compliance with this subpart on the effective date of the waste to fuel switch as specified in §60.2145(a)(2) and (3) of subpart CCCC or §60.2710(a)(2) and (3) of subpart DDDD.

Double L does not own or operate industrial, commercial, or institutional boilers; therefore, Double L is not subject to any requirements pursuant to 40 CFR Part 63 Subpart JJJJJJ.

National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 63 Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines)

Source: 69 FR 33506, June 15, 2004, unless otherwise noted.

§63.6580 What is the purpose of subpart ZZZZ?

Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.

§63.6585 Am I subject to this subpart?

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand.

(a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

(b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site.

(c) An area source of HAP emissions is a source that is not a major source.

(d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable.

(e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C.

(f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in §63.6675, which includes operating according to the provisions specified in §63.6640(f).

(1) Existing residential emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in §63.6640(f)(4)(ii).

(2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in §63.6640(f)(4)(ii).

(3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in §63.6640(f)(4)(ii).

[69 FR 33506, June 15, 2004, as amended at 73 FR 3603, Jan. 18, 2008; 78 FR 6700, Jan. 30, 2013]

Double L does not own or operate stationary RICE; therefore, Double L is not subject to any requirements pursuant to 40 CFR Part 63 Subpart ZZZZ.

National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 63 Subpart MMMM (NESHAP for Surface Coating of Miscellaneous Metal Parts and Products)

Source: 69 FR 157, Jan. 2, 2004, unless otherwise noted.

§63.3880 What is the purpose of this subpart?
This subpart establishes national emission standards for hazardous air pollutants (NESHAP) for miscellaneous metal parts and products surface coating facilities. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations.

§63.3881 Am I subject to this subpart?

(a) Miscellaneous metal parts and products include, but are not limited to, metal components of the following types of products as well as the products themselves: motor vehicle parts and accessories, bicycles and sporting goods, recreational vehicles, extruded aluminum structural components, railroad cars, heavy duty trucks, medical equipment, lawn and garden equipment, electronic equipment, magnet wire, steel drums, industrial machinery, metal pipes, and numerous other industrial, household, and consumer products. Except as provided in paragraph (c) of this section, the source category to which this subpart applies is the surface coating of any miscellaneous metal parts or products, as described in paragraph (a)(1) of this section, and it includes the subcategories listed in paragraphs (a)(2) through (6) of this section.

(1) Surface coating is the application of coating to a substrate using, for example, spray guns or dip tanks. When application of coating to a substrate occurs, then surface coating also includes associated activities, such as surface preparation, cleaning, mixing, and storage. However, these activities do not comprise surface coating if they are not directly related to the application of the coating. Coating application with handheld, non-refillable aerosol containers, touch-up markers, marking pens, or the application of paper film or plastic film which may be pre-coated with an adhesive by the manufacturer are not coating operations for the purposes of this subpart.

(2) The general use coating subcategory includes all surface coating operations that are not high performance, magnet wire, rubber-to-metal, or extreme performance fluoropolymer coating operations.

(3) The high performance coating subcategory includes surface coating operations that are performed using coatings that meet the definition of high performance architectural coating or high temperature coating in §63.3981.

(4) The magnet wire coating subcategory includes surface coating operations that are performed using coatings that meet the definition of magnet wire coatings in §63.3981.

(5) The rubber-to-metal coatings subcategory includes surface coating operations that are performed using coatings that meet the definition of rubber-to-metal coatings in §63.3981.

(6) The extreme performance fluoropolymer coatings subcategory includes surface coating operations that are performed using coatings that meet the definition of extreme performance fluoropolymer coatings in §63.3981.

(b) You are subject to this subpart if you own or operate a new, reconstructed, or existing affected source, as defined in §63.3882, that uses 946 liters (250 gallons (gal)) per year, or more, of coatings that contain hazardous air pollutants (HAP) in the surface coating of miscellaneous metal parts and products defined

in paragraph (a) of this section; and that is a major source, is located at a major source, or is part of a major source of emissions of HAP. A major source of HAP emissions is any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit any single HAP at a rate of 9.07 megagrams (Mg) (10 tons) or more per year or any combination of HAP at a rate of 22.68 Mg (25 tons) or more per year. You do not need to include coatings that meet the definition of non-HAP coating contained in §63.3981 in determining whether you use 946 liters (250 gal) per year, or more, of coatings in the surface coating of miscellaneous metal parts and products.

(c) This subpart does not apply to surface coating or a coating operation that meets any of the criteria of paragraphs (c)(1) through (17) of this section.

(1) A coating operation conducted at a facility where the facility uses only coatings, thinners and other additives, and cleaning materials that contain no organic HAP, as determined according to §63.3941(a).

(2) Surface coating operations that occur at research or laboratory facilities, or is part of janitorial, building, and facility maintenance operations, or that occur at hobby shops that are operated for noncommercial purposes.

(3) Coatings used in volumes of less than 189 liters (50 gal) per year, provided that the total volume of coatings exempt under this paragraph does not exceed 946 liters (250 gal) per year at the facility.

(4) The surface coating of metal parts and products performed on-site at installations owned or operated by the Armed Forces of the United States (including the Coast Guard and the National Guard of any such State) or the National Aeronautics and Space Administration, or the surface coating of military munitions manufactured by or for the Armed Forces of the United States (including the Coast Guard and the National Guard of any such State).

(5) Surface coating where plastic is extruded onto metal wire or cable or metal parts or products to form a coating.

(6) Surface coating of metal components of wood furniture that meet the applicability criteria for wood furniture manufacturing (subpart JJ of this part).

(7) Surface coating of metal components of large appliances that meet the applicability criteria for large appliance surface coating (subpart NNNN of this part).

(8) Surface coating of metal components of metal furniture that meet the applicability criteria for metal furniture surface coating (subpart RRRR of this part).

(9) Surface coating of metal components of wood building products that meet the applicability criteria for wood building products surface coating (subpart QQQQ of this part).

(10) Surface coating of metal components of aerospace vehicles that meet the applicability criteria for aerospace manufacturing and rework (40 CFR part 63, subpart GG).

(11) Surface coating of metal parts intended for use in an aerospace vehicle or component using specialty coatings as defined in appendix A to subpart GG of this part.

(12) Surface coating of metal components of ships that meet the applicability criteria for shipbuilding and ship repair (subpart II of this part).

(13) Surface coating of metal using a web coating process that meets the applicability criteria for paper and other web coating (subpart JJJJ of this part).

(14) Surface coating of metal using a coil coating process that meets the applicability criteria for metal coil coating (subpart SSSS of this part).

(15) Surface coating of boats or metal parts of boats (including, but not limited to, the use of assembly adhesives) where the facility meets the applicability criteria for boat manufacturing facilities (subpart VVVV of this part), except where the surface coating of the boat is a metal coating operation performed on personal watercraft or parts of personal watercraft. This subpart does apply to metal coating operations performed on personal watercraft and parts of personal watercraft.

(16) Surface coating of assembled on-road vehicles that meet the applicability criteria for the assembled on-road vehicle subcategory in plastic parts and products surface coating (40 CFR part 63, subpart PPPP).

(17) Surface coating of metal components of automobiles and light-duty trucks that meets the applicability criteria in §63.3082(b) for the Surface Coating of Automobiles and Light-Duty Trucks NESHAP (40 CFR part 63, subpart IIII) at a facility that meets the applicability criteria in §63.3081(b).

(d) If your facility meets the applicability criteria in §63.3081(b) of the Surface Coating of Automobiles and Light-Duty Trucks NESHAP (40 CFR part 63, subpart IIII), and you perform surface coating of metal parts or products that meets both the applicability criteria in §63.3082(c) and the applicability criteria of the Surface Coating of Miscellaneous Metal Parts and Products (40 CFR part 63, subpart MMMM), then for the surface coating of any or all of your metal parts or products that meets the applicability criteria in §63.3082(c), you may choose to comply with the requirements of subpart IIII of this part in lieu of complying with the Surface Coating of Miscellaneous Metal Parts and Products NESHAP. Surface coating operations on metal parts or products (e.g., parts for motorcycles or lawnmowers) not intended for use in automobiles, light-duty trucks, or other motor vehicles as defined in §63.3176 cannot be made part of your affected source under subpart IIII of this part.

(e) If you own or operate an affected source that meets the applicability criteria of this subpart and at the same facility you also perform surface coating that meets the applicability criteria of any other final surface coating NESHAP in this part you may choose to comply as specified in paragraph (e)(1), (2), or (3) of this section.

(1) You may have each surface coating operation that meets the applicability criteria of a separate NESHAP comply with that NESHAP separately.

(2) You may comply with the emission limitation representing the predominant surface coating activity at your facility, as determined according to paragraphs (e)(2)(i) and (ii) of this section. However, you may not establish high performance, rubber-to-metal, or extreme performance fluoropolymer coating operations as the predominant activity. You must not consider any surface coating activity that is subject to the Surface Coating of Automobiles and Light-Duty Trucks NESHAP (40 CFR part 63, subpart IIII) in determining the predominant surface coating activity at your facility.

(i) If a surface coating operation accounts for 90 percent or more of the surface coating activity at your facility (that is, the predominant activity), then compliance with the emission limitations of the predominant activity for all surface coating operations constitutes compliance with these and other applicable surface coating NESHAP. In determining predominant activity, you must include coating activities that meet the applicability criteria of other surface coating NESHAP and constitute more than 1 percent of total coating activities at your facility. Coating activities that meet the applicability criteria of other surface coating NESHAP but comprise less than 1 percent of coating activities need not be included in the determination of predominant activity but must be included in the compliance calculation.

(ii) You must use liters (gal) of solids used as a measure of relative surface coating activity over a representative period of operation. You may estimate the relative volume of coating solids used from parameters other than coating consumption and volume solids content (*e.g.*, design specifications for the parts or products coated and the number of items produced). The determination of predominant activity must accurately reflect current and projected coating operations and must be verifiable through appropriate documentation. The use of parameters other than coating consumption and volume solids content must be approved by the Administrator. You may use data for any reasonable time period of at least 1 year in determining the relative amount of coating activity, as long as they represent the way the

source will continue to operate in the future and are approved by the Administrator. You must determine the predominant activity at your facility and submit the results of that determination with the initial notification required by §63.3910(b). You must also determine predominant activity annually and include the determination in the next semi-annual compliance report required by §63.3920(a).

(3) You may comply with a facility-specific emission limit calculated from the relative amount of coating activity that is subject to each emission limit. If you elect to comply using the facility-specific emission limit alternative, then compliance with the facility-specific emission limit and the emission limitations in this subpart for all surface coating operations constitutes compliance with this and other applicable surface coating NESHAP. The procedures for calculating the facility-specific emission limit are specified in §63.3890. In calculating a facility-specific emission limit, you must include coating activities that meet the applicability criteria of other surface coating NESHAP and constitute more than 1 percent of total coating activities at your facility. You must not consider any surface coating activity that is subject to the Surface Coating of Automobiles and Light-Duty Trucks NESHAP (40 CFR part 63, subpart IIII) in determining a facility-specific emission limit for your facility. Coating activities that meet the applicability criteria of other surface coating NESHAP but comprise less than 1 percent of total coating activities need not be included in the calculation of the facility-specific emission limit but must be included in the compliance calculations

Double L is not a major source of HAPs; therefore, this subpart does not apply.

National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 63 Subpart DDDDD (NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters)

Source: SOURCE: 76 FR 15664, Mar. 21, 2011, unless otherwise noted.

§63.7480 What is the purpose of this subpart?
This subpart establishes national emission limitations and work practice standards for hazardous air pollutants (HAP) emitted from industrial, commercial, and institutional boilers and process heaters located at major sources of HAP. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and work practice standards.

§63.7485 Am I subject to this subpart?
You are subject to this subpart if you own or operate an industrial, commercial, or institutional boiler or process heater as defined in §63.7575 that is located at, or is part of, a major source of HAP, except as specified in §63.7491. For purposes of this subpart, a major source of HAP is as defined in §63.2, except that for oil and natural gas production facilities, a major source of HAP is as defined in §63.7575.

§63.7490 What is the affected source of this subpart?

(a) This subpart applies to new, reconstructed, and existing affected sources as described in paragraphs (a)(1) and (2) of this section.

(1) The affected source of this subpart is the collection at a major source of all existing industrial, commercial, and institutional boilers and process heaters within a subcategory as defined in §63.7575.

(2) The affected source of this subpart is each new or reconstructed industrial, commercial, or institutional boiler or process heater, as defined in §63.7575, located at a major source.

(b) A boiler or process heater is new if you commence construction of the boiler or process heater after June 4, 2010, and you meet the applicability criteria at the time you commence construction.

(c) A boiler or process heater is reconstructed if you meet the reconstruction criteria as defined in §63.2, you commence reconstruction after June 4, 2010, and you meet the applicability criteria at the time you commence reconstruction.

(d) A boiler or process heater is existing if it is not new or reconstructed.

(e) An existing electric utility steam generating unit (EGU) that meets the applicability requirements of this subpart after the effective date of this final rule due to a change (e.g., fuel switch) is considered to be an existing source under this subpart.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7162, Jan. 31, 2013]

§63.7491 Are any boilers or process heaters not subject to this subpart?

The types of boilers and process heaters listed in paragraphs (a) through (n) of this section are not subject to this subpart.

(a) An electric utility steam generating unit (EGU) covered by subpart UUUUU of this part.

(b) A recovery boiler or furnace covered by subpart MM of this part.

(c) A boiler or process heater that is used specifically for research and development, including test steam boilers used to provide steam for testing the propulsion systems on military vessels. This does not include units that provide heat or steam to a process at a research and development facility.

(d) A hot water heater as defined in this subpart.

(e) A refining kettle covered by subpart X of this part.

(f) An ethylene cracking furnace covered by subpart YY of this part.

(g) Blast furnace stoves as described in EPA-453/R-01-005 (incorporated by reference, see §63.14).

(h) Any boiler or process heater that is part of the affected source subject to another subpart of this part, such as boilers and process heaters used as control devices to comply with subparts JJJ, OOO, PPP, and U of this part.

(i) Any boiler or process heater that is used as a control device to comply with another subpart of this part, or part 60, part 61, or part 65 of this chapter provided that at least 50 percent of the average annual heat input during any 3 consecutive calendar years to the boiler or process heater is provided by regulated gas streams that are subject to another standard.

(j) Temporary boilers as defined in this subpart.

(k) Blast furnace gas fuel-fired boilers and process heaters as defined in this subpart.

(l) Any boiler specifically listed as an affected source in any standard(s) established under section 129 of the Clean Air Act.

(m) A unit that burns hazardous waste covered by Subpart EEE of this part. A unit that is exempt from Subpart EEE as specified in §63.1200(b) is not covered by Subpart EEE.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7162, Jan. 31, 2013]

EDITORIAL NOTE: At 78 FR 7162, Jan. 31, 2013, §63.7491 was amended by revising paragraph (n). However, there is no paragraph (n) to be revised.

Double L has three Reznor UDAS-200 space heaters to provide comfort or space heat to the facility. As stated in 40 CFR Part 63 Subpart DDDDD § 63.7575, process heaters do not include units used for comfort heat or space heat. In addition, Double L is not a major source of HAPs. Therefore,

Double L is not subject to any requirements pursuant to 40 CFR Part 63 Subpart DDDDD.

National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 63 Subpart HHHHHH

(NESHAP for Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources)

Source: 73 FR 1759, Jan. 9, 2008, unless otherwise noted.

§63.11169 What is the purpose of this subpart?

Except as provided in paragraph (d) of this section, this subpart establishes national emission standards for hazardous air pollutants (HAP) for area sources involved in any of the activities in paragraphs (a) through (c) of this section. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission standards contained herein.

(a) Paint stripping operations that involve the use of chemical strippers that contain methylene chloride (MeCl), Chemical Abstract Service number 75092, in paint removal processes;

(b) Autobody refinishing operations that encompass motor vehicle and mobile equipment spray-applied surface coating operations;

(c) Spray application of coatings containing compounds of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd), collectively referred to as the target HAP to any part or product made of metal or plastic, or combinations of metal and plastic that are not motor vehicles or mobile equipment.

(d) This subpart does not apply to any of the activities described in paragraph (d)(1) through (6) of this section.

(1) Surface coating or paint stripping performed on site at installations owned or operated by the Armed Forces of the United States (including the Coast Guard and the National Guard of any such State), the National Aeronautics and Space Administration, or the National Nuclear Security Administration.

(2) Surface coating or paint stripping of military munitions, as defined in §63.11180, manufactured by or for the Armed Forces of the United States (including the Coast Guard and the National Guard of any such State) or equipment directly and exclusively used for the purposes of transporting military munitions.

(3) Surface coating or paint stripping performed by individuals on their personal vehicles, possessions, or property, either as a hobby or for maintenance of their personal vehicles, possessions, or property. This subpart also does not apply when these operations are performed by individuals for others without compensation. An individual who spray applies surface coating to more than two motor vehicles or pieces of mobile equipment per year is subject to the requirements in this subpart that pertain to motor vehicle and mobile equipment surface coating regardless of whether compensation is received.

(4) Surface coating or paint stripping that meets the definition of "research and laboratory activities" in §63.11180.

(5) Surface coating or paint stripping that meets the definition of "quality control activities" in §63.11180.

(6) Surface coating or paint stripping activities that are covered under another area source NESHAP.

§63.11170 Am I subject to this subpart?

(a) You are subject to this subpart if you operate an area source of HAP as defined in paragraph (b) of this section, including sources that are part of a tribal, local, State, or Federal facility and you perform one or more of the activities in paragraphs (a)(1) through (3) of this section:

(1) Perform paint stripping using MeCl for the removal of dried paint (including, but not limited to, paint, enamel, varnish, shellac, and lacquer) from wood, metal, plastic, and other substrates.

(2) Perform spray application of coatings, as defined in §63.11180, to motor vehicles and mobile equipment including operations that are located in stationary structures at fixed locations, and mobile repair and refinishing operations that travel to the customer's location, except spray coating applications that meet the definition of facility maintenance in §63.11180. However, if you are the owner or operator of a motor vehicle or mobile equipment surface coating operation, you may petition the Administrator for an exemption from this subpart if you can demonstrate, to the satisfaction of the Administrator, that you spray apply no coatings that contain the target HAP, as defined in §63.11180. Petitions must include a description of the coatings that you spray apply and your certification that you do not spray apply any coatings containing the target HAP. If circumstances change such that you intend to spray apply coatings containing the target HAP, you must submit the initial notification required by 63.11175 and comply with the requirements of this subpart.

(3) Perform spray application of coatings that contain the target HAP, as defined in §63.11180, to a plastic and/or metal substrate on a part or product, except spray coating applications that meet the definition of facility maintenance or space vehicle in §63.11180.

(b) An area source of HAP is a source of HAP that is not a major source of HAP, is not located at a major source, and is not part of a major source of HAP emissions. A major source of HAP emissions is any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit any single HAP at a rate of 9.07 megagrams (Mg) (10 tons) or more per year, or emit any combination of HAP at a rate of 22.68 Mg (25 tons) or more per year.

Double L does not use MeCl, CAS 75092, in paint removal processes. Double L does not apply spray application of coatings containing compounds of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd), collectively referred to as the target HAP to any part or product made of metal or plastic, or combinations of metal and plastic that are not motor vehicles or mobile equipment. Therefore, this subpart does not apply.

National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 63 Subpart XXXXXX (NESHAP for Area Source Standards for Nine Metal Fabrication and Finishing Source Categories)

Source: 73 FR 43000, July 23, 2008, unless otherwise noted.

Applicability and Compliance Dates

§ 63.11514 Am I subject to this subpart?

1.0 §63.11514 Am I subject to this subpart?

(a) You are subject to this subpart if you own or operate an area source that is primarily engaged in the operations in one of the nine source categories listed in paragraphs (a)(1) through (9) of this section. Descriptions of these source categories are shown in Table 1 of this subpart. "Primarily engaged" is defined in §63.11522, "What definitions apply to this subpart?"

(1) Electrical and Electronic Equipment Finishing Operations;

(2) Fabricated Metal Products;

(3) Fabricated Plate Work (Boiler Shops);

(4) Fabricated Structural Metal Manufacturing;

(5) Heating Equipment, except Electric;

(6) Industrial Machinery and Equipment Finishing Operations;

(7) Iron and Steel Forging;

(8) Primary Metal Products Manufacturing; and

(9) Valves and Pipe Fittings.

(b) The provisions of this subpart apply to each new and existing affected source listed and defined in paragraphs (b)(1) through (5) of this section if you use materials that contain or have the potential to emit metal fabrication or finishing metal HAP (MFHAP), defined to be the compounds of cadmium, chromium, lead, manganese, and nickel, or any of these metals in the elemental form with the exception of lead. Materials that contain MFHAP are defined to be materials that contain greater than 0.1 percent for carcinogens, as defined by OSHA at 29 CFR 1910.1200(d)(4), and greater than 1.0 percent for noncarcinogens. For the MFHAP, this corresponds to materials that contain cadmium, chromium, lead, or nickel in amounts greater than or equal to 0.1 percent by weight (of the metal), and materials that contain manganese in amounts greater than or equal to 1.0 percent by weight (of the metal), as shown in formulation data provided by the manufacturer or supplier, such as the Material Safety Data Sheet for the material.

(1) A dry abrasive blasting affected source is the collection of all equipment and activities necessary to perform dry abrasive blasting operations which use materials that contain MFHAP or that have the potential to emit MFHAP.

(2) A machining affected source is the collection of all equipment and activities necessary to perform machining operations which use materials that contain MFHAP, as defined in §63.11522, "What definitions apply to this subpart?", or that have the potential to emit MFHAP.

(3) A dry grinding and dry polishing with machines affected source is the collection of all equipment and activities necessary to perform dry grinding and dry polishing with machines operations which use materials that contain MFHAP, as defined in §63.11522, "What definitions apply to this subpart?", or have the potential to emit MFHAP.

(4) A spray painting affected source is the collection of all equipment and activities necessary to perform spray-applied painting operations using paints which contain MFHAP. A spray painting affected source includes all equipment used to apply cleaning materials to a substrate to prepare it for paint application (surface preparation) or to remove dried paint; to apply a paint to a substrate (paint application) and to dry or cure the paint after application; or to clean paint operation equipment (equipment cleaning). Affected source(s) subject to the requirements of this paragraph are not subject to the miscellaneous surface coating provisions of subpart HHHHHH of this part, "National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources."

(5) A welding affected source is the collection of all equipment and activities necessary to perform welding operations which use materials that contain MFHAP, as defined in §63.11522, "What definitions apply to this subpart?", or have the potential to emit MFHAP.

(c) An affected source is existing if you commenced construction or reconstruction of the affected source, as defined in §63.2, "General Provisions" to part 63, before April 3, 2008.

(d) An affected source is new if you commenced construction or reconstruction of the affected source, as defined in §63.2, "General Provisions" to part 63, on or after April 3, 2008.

(e) This subpart does not apply to research or laboratory facilities, as defined in section 112(c)(7) of the Clean Air Act (CAA).

(f) This subpart does not apply to tool or equipment repair operations, facility maintenance, or quality control activities as defined in §63.11522, "What definitions apply to this subpart?"

(g) This subpart does not apply to operations performed on site at installations owned or operated by the Armed Forces of the United States (including the Coast Guard and the National Guard of any such state), the National Aeronautics and Space Administration, or the National Nuclear Security Administration.

(h) This subpart does not apply to operations that produce military munitions, as defined in §63.11522, "What definitions apply to this subpart?", manufactured by or for the Armed Forces of the United States (including the Coast Guard and the National Guard of any such state), or equipment directly and exclusively used for the purposes of transporting military munitions.

(i) You are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not otherwise required by law to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a). Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart.

Double L has a SIC 3523 and NAICS 333111 and is primarily engaged in designing and repairing farm machinery and equipment for use in the preparation and maintenance of the soil; planting and harvesting of the crop; preparing crops for market on the farm; or for use in performing other farm operations and processes. Double L's SIC and NAICS does not fall under one of the above SIC and NAICS. Therefor 40 CFR Part 63 Subpart XXXXXX does not apply.

APPENDIX A

DEQ PTC FORMS

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Cover Sheet for Air Permit Application – Permit to Construct **Form CSPTC**

Please see instructions on page 2 before filling out the form.

COMPANY NAME, FACILITY NAME, AND FACILITY ID NUMBER			
1. Company Name	Double L Manufacturing		
2. Facility Name	Apache River, LLC	3. Facility ID No.	067-0042
4. Brief Project Description - One sentence or less	Permit to Construct		

PERMIT APPLICATION TYPE

5. ☒ New Source ☐ New Source at Existing Facility ☐ PTC for a Tier I Source Processed Pursuant to IDAPA 58.01.01.209.05.c
☐ Unpermitted Existing Source ☐ Facility Emissions Cap ☐ Modify Existing Source: Permit No.:____ Date Issued:____
☐ Required by Enforcement Action: Case No.:____

6. ☒ Minor PTC ☐ Major PTC

FORMS INCLUDED

Included	N/A	Forms		DEQ Verify
☒	☐	Form CSPTC – Cover Sheet		☐
☒	☐	Form GI – Facility Information		☐
☒	☐	Form EU0 – Emissions Units General (17)		☐
☐	☒	Form EU1– Industrial Engine Information	Please specify number of EU1s attached: ____	☐
☐	☒	Form EU2– Nonmetallic Mineral Processing Plants	Please specify number of EU2s attached: ____	☐
☒	☐	Form EU3– Spray Paint Booth Information	Please specify number of EU3s attached: 1	☐
☐	☒	Form EU4– Cooling Tower Information	Please specify number of EU3s attached: ____	☐
☐	☒	Form EU5 – Boiler Information	Please specify number of EU4s attached: ____	☐
☐	☒	Form CBP– Concrete Batch Plant	Please specify number of CBPs attached: ____	☐
☐	☒	Form HMAP – Hot Mix Asphalt Plant	Please specify number of HMAPs attached: ____	☐
☐	☒	PERF – Portable Equipment Relocation Form		☐
☐	☒	Form AO – Afterburner/Oxidizer		☐
☐	☒	Form CA – Carbon Adsorber		☐
☐	☒	Form CYS – Cyclone Separator		☐
☐	☒	Form ESP – Electrostatic Precipitator		☐
☐	☒	Form BCE– Baghouses Control Equipment		☐
☐	☒	Form SCE– Scrubbers Control Equipment		☐
☐	☒	Form VSCE – Venturi Scrubber Control Equipment		☐
☐	☒	Form CAM – Compliance Assurance Monitoring		☐
☒	☐	Forms EI— Emissions Inventory		☐
☒	☐	PP – Plot Plan		☐
☐	☒	Forms MI1 – MI4 – Modeling	(Excel workbook, all 4 worksheets)	☐
☒	☐	Form FRA – Federal Regulation Applicability		☐

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

General Information **Form GI**
Revision 7
2/18/10

Please see instructions on page 2 before filling out the form.

All information is required. If information is missing, the application will not be processed.

IDENTIFICATION

1. Company Name	2. Facility Name:
Apache River, LLC	Double L

3. Brief Project Description:	Permit to Construct Application

FACILITY INFORMATION

4. Primary Facility Permit Contact Person/Title	James Kearl		Head of Operations	
5. Telephone Number and Email Address	(208) 438.5592 x 120		jkearl@doubleiglobal.com	
6. Alternate Facility Contact Person/Title	Chris Hunsaker		CEO	
7. Telephone Number and Email Address	(208) 438.5592 x 105		chunsaker@doubleiglobal.com	
8. Address to Which the Permit Should be Sent	307 Warm Springs Way			
9. City/County/State/Zip Code	Heyburn	Minidoka	Idaho	83336
10. Equipment Location Address (if different than the mailing address above)				
11. City/County/State/Zip Code				
12. Is the Equipment Portable?	☐ Yes ☒ No			
13. SIC Code(s) and NAICS Code	Primary SIC: 3523	Secondary SIC:	NAICS: 332212	
14. Brief Business Description and Principal Product	Double L designs and manufactures farm machinery and harvesting equipment			
15. Indentify any adjacent or contiguous facility that this company owns and/or operates	None			
16. Specify the reason for the application	☒ Permit to Construct (PTC) For Tier I permitted facilities only: If you are applying for a PTC then you must also specify how the PTC will be incorporated into the Tier I permit ☐ Incorporate the PTC at the time of the Tier I renewal ☐ Co-process the Tier I modification and PTC ☐ Administratively amend the Tier I permit to incorporate the PTC upon your request (IDAPA 58.01.01.209.05.a, b, or c) ☐ Tier I Permit ☐ Tier II Permit ☐ Tier II/Permit to Construct			

CERTIFICATION

In accordance with IDAPA 58.01.01.123 (Rules for the Control of Air Pollution in Idaho), I certify based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete

17. Responsible Official's Name/Title	James Kearl	Head of Operations	
18. Responsible Official Address	307 Warms Springs Way, Heyburn, Idaho 8333		
19 Responsible Official Telephone Number	(208) 438 5592 x 120		
20. Responsible Official Email Address	jkearl@doubleiglobal.com		
21. Responsible Official's Signature		Date:	11-4-13

22. ☐ Check here to indicate that you would like to review the draft permit prior to final issuance

DEQ AIR QUALITY PROGRAM
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AIR PERMIT APPLICATION

Revision 6
10/7/09

For each box in the table below, CTRL+click on the blue underlined text for instructions and information.

IDENTIFICATION	
1. Company Name: Double L Manufacturing	2. Facility Name: Apache River, LLC
3. Brief Project Description: Permit to Construct	

APPLICABILITY DETERMINATION	
4. List applicable subparts of the New Source Performance Standards (NSPS) ( ). Examples of NSPS affected emissions units include internal combustion engines, boilers, turbines, etc. The applicant must thoroughly review the list of affected emissions units.	List of applicable subpart(s): ☑ Not Applicable
5. List applicable subpart(s) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) found in and Examples of affected emission units include solvent cleaning operations, industrial cooling towers, paint stripping and miscellaneous surface coating. that should be useful to applicants.	List of applicable subpart(s): ☑ Not Applicable
6. For each subpart identified above, conduct a complete a regulatory analysis using the instructions and referencing the example provided on the following pages. **Note** - Regulatory reviews must be submitted with sufficient detail so that DEQ can verify applicability and document in legal terms why the regulation applies. Regulatory reviews that are submitted with insufficient detail will be determined incomplete.	☑ A detailed regulatory review is provided (Follow instructions and example). ☐ DEQ has already been provided a detailed regulatory review. Give a reference to the document including the date.

IF YOU ARE UNSURE HOW TO ANSWER ANY OF THESE QUESTIONS, CALL THE AIR PERMIT HOTLINE AT 1-877-5PERMIT

It is emphasized that it is the applicant's responsibility to satisfy all technical and regulatory requirements, and that DEQ will help the applicant understand what those requirements are prior to the application being submitted but that DEQ will not perform the required technical or regulatory analysis on the applicant's behalf.

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Double L Manufacturing	Apache River,LLC	067-0042

4. Brief Project Description: Permit to Construct

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5.	Emissions Unit (EU) Name:	ABRASIVE BLAST BOOTH
6.	EU ID Number:	BLAST BOOTH 01
7.	EU Type:	☒ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8.	Manufacturer:	SPRAYLINE
9.	Model:	SL BR 264415
10..	Maximum Capacity:	NA
11.	Date of Construction:	2012
12.	Date of Modification (if any):	N/A
13.	Is this a Controlled Emission Unit?	☐ No ☒ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID: Celluose/Polyester Filters

15. Date of Installation: 2012 16. Date of Modification (if any): NA

17. Manufacturer and Model Number: Envirosystems

18. ID(s) of Emission Unit Controlled: Blast Booth 01

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☒ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency	100 %	100 %	NA	NA	NA	NA

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22.	Actual Operation:	2,600 HOURS A YEAR
23.	Maximum Operation:	3,000 HOURS A YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits? ☒ Yes ☐ No (If Yes, indicate all that apply below)

☒	Operation Hour Limit(s):	3,000 HR/YR
☐	Production Limit(s):	
☐	Material Usage Limit(s):	
☐	Limits Based on Stack Testing:	Please attach all relevant stack testing summary reports
☐	Other:	

25. Rationale for Requesting the Limit(s): OPERATIONAL DESIGN

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
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Air Permit Hotline – 1-877-5PERMIT

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Double L Manufacturing	Apache River,LLC	067-0042

4. Brief Project Description: Permit to Construct

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5.	Emissions Unit (EU) Name:	NATURAL GAS FURNANCE
6.	EU ID Number:	FURNANCE 01
7.	EU Type:	☒ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8.	Manufacturer:	LENNOX
9.	Model:	59SC5A140S24
10..	Maximum Capacity:	140,000 BTU
11.	Date of Construction:	2012
12.	Date of Modification (if any):	N/A
13.	Is this a Controlled Emission Unit?	☒ No ☐ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:

15. Date of Installation: 16. Date of Modification (if any):

17. Manufacturer and Model Number:

18. ID(s) of Emission Unit Controlled:

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22.	Actual Operation:	2,600 HOURS A YEAR
23.	Maximum Operation:	3,000 HOURS A YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits? ☒ Yes ☐ No (If Yes, indicate all that apply below)

- ☒ Operation Hour Limit(s): 3,000
- ☐ Production Limit(s):
- ☐ Material Usage Limit(s):
- ☐ Limits Based on Stack Testing: Please attach all relevant stack testing summary reports
- ☐ Other:

25. Rationale for Requesting the Limit(s): OPERATIONAL CAPACITY

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Double L Manufacturing	Apache River,LLC	067-0042

4. Brief Project Description: Permit to Construct

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5.	Emissions Unit (EU) Name:	NATURAL GAS FURNANCE
6.	EU ID Number:	FURNANCE 02
7.	EU Type:	☒ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source – Previous Permit #: Date Issued:
8.	Manufacturer:	LENNOX
9.	Model:	59SC5A140S24
10..	Maximum Capacity:	140,000 BTU
11.	Date of Construction:	2012
12.	Date of Modification (if any):	N/A
13.	Is this a Controlled Emission Unit?	☒ No ☐ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:

15. Date of Installation: 16. Date of Modification (if any):

17. Manufacturer and Model Number:

18. ID(s) of Emission Unit Controlled:

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22.	Actual Operation:	2,600 HOURS A YEAR
23.	Maximum Operation:	3,000 HOURS A YEAR

REQUESTED LIMITS

24.	Are you requesting any permit limits?	☒ Yes ☐ No (If Yes, indicate all that apply below)
	☒ Operation Hour Limit(s):	3,000
	☐ Production Limit(s):	
	☐ Material Usage Limit(s):	
	☐ Limits Based on Stack Testing:	Please attach all relevant stack testing summary reports
	☐ Other:	
25.	Rationale for Requesting the Limit(s):	OPERATIONAL CAPACITY

DEQ AIR QUALITY PROGRAM
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For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Double L Manufacturing	Apache River,LLC	067-0042

4. Brief Project Description: Permit to Construct

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5.	Emissions Unit (EU) Name:	NATURAL GAS FURNANCE
6.	EU ID Number:	FURNANCE 03
7.	EU Type:	☒ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8.	Manufacturer:	LENNOX
9.	Model:	59SC5A120S24
10..	Maximum Capacity:	120,000 BTU
11.	Date of Construction:	2012
12.	Date of Modification (if any):	N/A
13.	Is this a Controlled Emission Unit?	☒ No ☐ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:

15. Date of Installation: 16. Date of Modification (if any):

17. Manufacturer and Model Number:

18. ID(s) of Emission Unit Controlled:

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22.	Actual Operation:	2,600 HOURS A YEAR
23.	Maximum Operation:	3,000 HOURS A YEAR

REQUESTED LIMITS

24.	Are you requesting any permit limits?	☒ Yes ☐ No (If Yes, indicate all that apply below)
	☐ Operation Hour Limit(s):	3,000
	☐ Production Limit(s):	
	☐ Material Usage Limit(s):	
	☐ Limits Based on Stack Testing:	Please attach all relevant stack testing summary reports
	☐ Other:	
25.	Rationale for Requesting the Limit(s):	OPERATIONAL CAPACITY

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
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Air Permit Hotline – 1-877-5PERMIT

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Double L Manufacturing	Apache River,LLC	067-0042

4. Brief Project Description: Permit to Construct

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5.	Emissions Unit (EU) Name:	NATURAL GAS FURNANCE
6.	EU ID Number:	FURNANCE 04
7.	EU Type:	☒ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8.	Manufacturer:	LENNOX
9.	Model:	59SC5A120S24
10..	Maximum Capacity:	120,000 BTU
11.	Date of Construction:	2012
12.	Date of Modification (if any):	N/A
13.	Is this a Controlled Emission Unit?	☒ No ☐ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:

15. Date of Installation: 16. Date of Modification (if any):

17. Manufacturer and Model Number:

18. ID(s) of Emission Unit Controlled:

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22.	Actual Operation:	2,600 HOURS A YEAR
23.	Maximum Operation:	3,000 HOURS A YEAR

REQUESTED LIMITS

24.	Are you requesting any permit limits?	☒ Yes ☐ No (If Yes, indicate all that apply below)
	☒ Operation Hour Limit(s):	3,000
	☐ Production Limit(s):	
	☐ Material Usage Limit(s):	
	☐ Limits Based on Stack Testing:	Please attach all relevant stack testing summary reports
	☐ Other:	
25.	Rationale for Requesting the Limit(s):	OPERATIONAL CAPACITY

DEQ AIR QUALITY PROGRAM
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Emissions Unit - General **Form EU0**
Revision 4
08/28/08

Please see instructions on page 2 before filling out the form.

IDENTIFICATION		
1. Company Name: Double L Manufacturing	2. Facility Name: Apache River,LLC	3. Facility ID No: 067-0042
4. Brief Project Description:	Permit to Construct	

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION	
5. Emissions Unit (EU) Name:	NATURAL GAS FURNANCE
6. EU ID Number:	FURNANCE 05
7. EU Type:	☒ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source – Previous Permit #: Date Issued:
8. Manufacturer:	LENNOX
9. Model:	59SC5A120S24
10.. Maximum Capacity:	120,000 BTU
11. Date of Construction:	2012
12. Date of Modification (if any):	N/A
13. Is this a Controlled Emission Unit?	☒ No ☐ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT						
14. Control Equipment Name and ID:						
15. Date of Installation:			16. Date of Modification (if any):			
17. Manufacturer and Model Number:						
18. ID(s) of Emission Unit Controlled:						
19. Is operating schedule different than emission units(s) involved?	☐ Yes ☐ No					
20. Does the manufacturer guarantee the control efficiency of the control equipment?	☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)					
	Pollutant Controlled					
Control Efficiency	PM	PM10	SO_2	NOx	VOC	CO
21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.						

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)	
22. Actual Operation:	2,600 HOURS A YEAR
23. Maximum Operation:	3,000 HOURS A YEAR

REQUESTED LIMITS	
24. Are you requesting any permit limits?	☒ Yes ☐ No (If Yes, indicate all that apply below)
☒ Operation Hour Limit(s):	3,000
☐ Production Limit(s):	
☐ Material Usage Limit(s):	
☐ Limits Based on Stack Testing:	Please attach all relevant stack testing summary reports
☐ Other:	
25. Rationale for Requesting the Limit(s):	OPERATIONAL CAPACITY

DEQ AIR QUALITY PROGRAM
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For assistance, call the
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Emissions Unit - General **Form EU0**
Revision 4
08/28/08

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Double L Manufacturing	Apache River,LLC	067-0042

4. Brief Project Description: Permit to Construct

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5.	Emissions Unit (EU) Name:	NATURAL GAS FURNANCE
6.	EU ID Number:	FURNANCE 06
7.	EU Type:	☒ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8.	Manufacturer:	LENNOX
9.	Model:	59SC5A100S21
10..	Maximum Capacity:	100,000 BTU
11.	Date of Construction:	2012
12.	Date of Modification (if any):	N/A
13.	Is this a Controlled Emission Unit?	☒ No ☐ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:

15. Date of Installation: 16. Date of Modification (if any):

17. Manufacturer and Model Number:

18. ID(s) of Emission Unit Controlled:

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22.	Actual Operation:	2,600 HOURS A YEAR
23.	Maximum Operation:	3,000 HOURS A YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits? ☒ Yes ☐ No (If Yes, indicate all that apply below)

- ☐ Operation Hour Limit(s): 3,000
- ☐ Production Limit(s):
- ☐ Material Usage Limit(s):
- ☐ Limits Based on Stack Testing: Please attach all relevant stack testing summary reports
- ☐ Other:

25. Rationale for Requesting the Limit(s): OPERATIONAL CAPACITY

DEQ AIR QUALITY PROGRAM
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Emissions Unit - General **Form EU0**
Revision 4
08/28/08

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Double L Manufacturing	Apache River,LLC	067-0042

4. Brief Project Description: Permit to Construct

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5.	Emissions Unit (EU) Name:	NATURAL GAS FURNANCE
6.	EU ID Number:	FURNANCE 07
7.	EU Type:	☒ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8.	Manufacturer:	LENNOX
9.	Model:	59SC5A100S21
10..	Maximum Capacity:	100,000 BTU
11.	Date of Construction:	2012
12.	Date of Modification (if any):	N/A
13.	Is this a Controlled Emission Unit?	☒ No ☐ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:

15. Date of Installation: 16. Date of Modification (if any):

17. Manufacturer and Model Number:

18. ID(s) of Emission Unit Controlled:

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22.	Actual Operation:	2,600 HOURS A YEAR
23.	Maximum Operation:	3,000 HOURS A YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits? ☒ Yes ☐ No (If Yes, indicate all that apply below)

- ☒ Operation Hour Limit(s): 3,000
- ☐ Production Limit(s):
- ☐ Material Usage Limit(s):
- ☐ Limits Based on Stack Testing: Please attach all relevant stack testing summary reports
- ☐ Other:

25. Rationale for Requesting the Limit(s): OPERATIONAL CAPACITY

DEQ AIR QUALITY PROGRAM
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Emissions Unit - General **Form EU0**
Revision 4
08/28/08

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Double L Manufacturing	Apache River,LLC	067-0042

4. Brief Project Description: Permit to Construct

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5.	Emissions Unit (EU) Name:	NATURAL GAS FURNANCE
6.	EU ID Number:	FURNANCE 08
7.	EU Type:	☒ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8.	Manufacturer:	LENNOX
9.	Model:	59SC5A060S17
10..	Maximum Capacity:	60,000 BTU
11.	Date of Construction:	2012
12.	Date of Modification (if any):	N/A
13.	Is this a Controlled Emission Unit?	☒ No ☐ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:

15. Date of Installation: 16. Date of Modification (if any):

17. Manufacturer and Model Number:

18. ID(s) of Emission Unit Controlled:

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22.	Actual Operation:	2,600 HOURS A YEAR
23.	Maximum Operation:	3,000 HOURS A YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits? ☒ Yes ☐ No (If Yes, indicate all that apply below)

- ☒ Operation Hour Limit(s): 3,000
- ☐ Production Limit(s):
- ☐ Material Usage Limit(s):
- ☐ Limits Based on Stack Testing: Please attach all relevant stack testing summary reports
- ☐ Other:

25. Rationale for Requesting the Limit(s): OPERATIONAL CAPACITY

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Double L Manufacturing	Apache River,LLC	067-0042

4. Brief Project Description: Permit to Construct

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5.	Emissions Unit (EU) Name:	PAINT BOOTH HEATER
6.	EU ID Number:	PB 01
7.	EU Type:	☒ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8.	Manufacturer:	BANANZA
9.	Model:	B-4000
10..	Maximum Capacity:	5,130,00 BTU
11.	Date of Construction:	2012
12.	Date of Modification (if any):	N/A
13.	Is this a Controlled Emission Unit?	☒ No ☐ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:

15. Date of Installation: 16. Date of Modification (if any):

17. Manufacturer and Model Number:

18. ID(s) of Emission Unit Controlled:

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22.	Actual Operation:	2,600 HOURS A YEAR
23.	Maximum Operation:	3,000 HOURS A YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits? ☒ Yes ☐ No (If Yes, indicate all that apply below)

- ☒ Operation Hour Limit(s): 3,000 HR/YR
- ☐ Production Limit(s):
- ☐ Material Usage Limit(s):
- ☐ Limits Based on Stack Testing: Please attach all relevant stack testing summary reports
- ☐ Other:

25. Rationale for Requesting the Limit(s): OPERATIONAL DESIGN

DEQ AIR QUALITY PROGRAM
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For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Double L Manufacturing	Apache River,LLC	067-0042

4. Brief Project Description: Permit to Construct

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5.	Emissions Unit (EU) Name:	NATURAL GAS SPACE HEATER
6.	EU ID Number:	HEATER 01
7.	EU Type:	☒ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source – Previous Permit #: Date Issued:
8.	Manufacturer:	REZNOR
9.	Model:	UDAS 200
10..	Maximum Capacity:	200,00 BTU
11.	Date of Construction:	2012
12.	Date of Modification (if any):	N/A
13.	Is this a Controlled Emission Unit?	☒ No ☐ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:

15. Date of Installation: 16. Date of Modification (if any):

17. Manufacturer and Model Number:

18. ID(s) of Emission Unit Controlled:

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22.	Actual Operation:	2,600 HOURS A YEAR
23.	Maximum Operation:	3,000 HOURS A YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits? ☒ Yes ☐ No (If Yes, indicate all that apply below)

- ☒ Operation Hour Limit(s): 3,000 HR/YR
- ☐ Production Limit(s):
- ☐ Material Usage Limit(s):
- ☐ Limits Based on Stack Testing: Please attach all relevant stack testing summary reports
- ☐ Other:

25. Rationale for Requesting the Limit(s): OPERATIONAL CAPACITY

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Double L Manufacturing	Apache River,LLC	067-0042

4. Brief Project Description: Permit to Construct

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5.	Emissions Unit (EU) Name:	NATURAL GAS SPACE HEATER
6.	EU ID Number:	HEATER 01
7.	EU Type:	☒ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source – Previous Permit #: Date Issued:
8.	Manufacturer:	REZNOR
9.	Model:	UDAS 200
10..	Maximum Capacity:	200,00 BTU
11.	Date of Construction:	2012
12.	Date of Modification (if any):	N/A
13.	Is this a Controlled Emission Unit?	☒ No ☐ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:

15. Date of Installation: 16. Date of Modification (if any):

17. Manufacturer and Model Number:

18. ID(s) of Emission Unit Controlled:

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22.	Actual Operation:	2,600 HOURS A YEAR
23.	Maximum Operation:	3,000 HOURS A YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits? ☒ Yes ☐ No (If Yes, indicate all that apply below)

- ☒ Operation Hour Limit(s): 3,000 HR/YR
- ☐ Production Limit(s):
- ☐ Material Usage Limit(s):
- ☐ Limits Based on Stack Testing: Please attach all relevant stack testing summary reports
- ☐ Other:

25. Rationale for Requesting the Limit(s): OPERATIONAL CAPACITY

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Double L Manufacturing	Apache River,LLC	067-0042

4. Brief Project Description: Permit to Construct

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5.	Emissions Unit (EU) Name:	NATURAL GAS SPACE HEATER
6.	EU ID Number:	HEATER 01
7.	EU Type:	☒ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source – Previous Permit #: Date Issued:
8.	Manufacturer:	REZNOR
9.	Model:	UDAS 200
10..	Maximum Capacity:	200,00 BTU
11.	Date of Construction:	2012
12.	Date of Modification (if any):	N/A
13.	Is this a Controlled Emission Unit?	☒ No ☐ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:

15. Date of Installation: 16. Date of Modification (if any):

17. Manufacturer and Model Number:

18. ID(s) of Emission Unit Controlled:

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22.	Actual Operation:	2,600 HOURS A YEAR
23.	Maximum Operation:	3,000 HOURS A YEAR

REQUESTED LIMITS

24.	Are you requesting any permit limits?	☒ Yes ☐ No (If Yes, indicate all that apply below)
	☒ Operation Hour Limit(s):	3,000 HR/YR
	☐ Production Limit(s):	
	☐ Material Usage Limit(s):	
	☐ Limits Based on Stack Testing:	Please attach all relevant stack testing summary reports
	☐ Other:	
25.	Rationale for Requesting the Limit(s):	OPERATIONAL CAPACITY

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Double L Manufacturing	Apache River,LLC	067-0042

4. Brief Project Description: Permit to Construct

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5.	Emissions Unit (EU) Name:	AIR HANDLING UNIT
6.	EU ID Number:	AIR HANDLING 01
7.	EU Type:	☒ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source – Previous Permit #: Date Issued:
8.	Manufacturer:	THERMO-CYCLER
9.	Model:	GTC-480M-MD
10..	Maximum Capacity:	550,000 BTU
11.	Date of Construction:	2012
12.	Date of Modification (if any):	N/A
13.	Is this a Controlled Emission Unit?	☒ No ☐ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:

15. Date of Installation: 16. Date of Modification (if any):

17. Manufacturer and Model Number:

18. ID(s) of Emission Unit Controlled:

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22.	Actual Operation:	2,600 HOURS A YEAR
23.	Maximum Operation:	3,000 HOURS A YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits? ☒ Yes ☐ No (If Yes, indicate all that apply below)

- ☒ Operation Hour Limit(s): 3,000 HR/YR
- ☐ Production Limit(s):
- ☐ Material Usage Limit(s):
- ☐ Limits Based on Stack Testing: Please attach all relevant stack testing summary reports
- ☐ Other:

25. Rationale for Requesting the Limit(s): OPERATIONAL CAPACITY

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Double L Manufacturing	Apache River,LLC	067-0042

4. Brief Project Description: Permit to Construct

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5.	Emissions Unit (EU) Name:	AIR HANDLING UNIT
6.	EU ID Number:	AIR HANDLING 01
7.	EU Type:	☒ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source -- Previous Permit #: Date Issued:
8.	Manufacturer:	THERMO-CYCLER
9.	Model:	GTC-480M-MD
10..	Maximum Capacity:	550,000 BTU
11.	Date of Construction:	2012
12.	Date of Modification (if any):	N/A
13.	Is this a Controlled Emission Unit?	☒ No ☐ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:

15. Date of Installation: 16. Date of Modification (if any):

17. Manufacturer and Model Number:

18. ID(s) of Emission Unit Controlled:

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22.	Actual Operation:	2,600 HOURS A YEAR
23.	Maximum Operation:	3,000 HOURS A YEAR

REQUESTED LIMITS

24.	Are you requesting any permit limits?	☒ Yes ☐ No (If Yes, indicate all that apply below)
	☒ Operation Hour Limit(s):	3,000 HR/YR
	☐ Production Limit(s):	
	☐ Material Usage Limit(s):	
	☐ Limits Based on Stack Testing:	Please attach all relevant stack testing summary reports
	☐ Other:	
25.	Rationale for Requesting the Limit(s):	OPERATIONAL CAPACITY

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Double L Manufacturing	Apache River,LLC	067-0042

4. Brief Project Description: Permit to Construct

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5.	Emissions Unit (EU) Name:	AIR HANDLING UNIT
6.	EU ID Number:	AIR HANDLING 01
7.	EU Type:	☒ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source – Previous Permit #: Date Issued:
8.	Manufacturer:	THERMO-CYCLER
9.	Model:	GTC-480M-MD
10..	Maximum Capacity:	550,000 BTU
11.	Date of Construction:	2012
12.	Date of Modification (if any):	N/A
13.	Is this a Controlled Emission Unit?	☒ No ☐ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID:

15. Date of Installation: 16. Date of Modification (if any):

17. Manufacturer and Model Number:

18. ID(s) of Emission Unit Controlled:

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency						

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22.	Actual Operation:	2,600 HOURS A YEAR
23.	Maximum Operation:	3,000 HOURS A YEAR

REQUESTED LIMITS

24.	Are you requesting any permit limits?	☒ Yes ☐ No (If Yes, indicate all that apply below)
	☒ Operation Hour Limit(s):	3,000 HR/YR
	☐ Production Limit(s):	
	☐ Material Usage Limit(s):	
	☐ Limits Based on Stack Testing:	Please attach all relevant stack testing summary reports
	☐ Other:	
25.	Rationale for Requesting the Limit(s):	OPERATIONAL CAPACITY

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Emissions Units - Spray Paint Booth Information **Form EU3**
Revision 5
08/28/08

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Double L Manufacturing	Apache River, LLC	067-0042

4. Brief Project Description: Permit to Construct

BOOTH INFORMATION

5. Booth Type: ☒ New Booth ☐ Unpermitted Existing Booth
☐ Modification to a Permitted Booth, Permit #: , Date Issued:

6. Construction Date: 2012

SPRAY GUN DESCRIPTION AND SPECIFICATIONS

Gun No.	7. Manufacturer	8. Model	9. Type	10. Transfer Eff. %	11. Rated Capacity (gal/hr)
1	Graco Contractor FTx	238350 Series A	Airless	65 %	0.31 Gal/Min
2					
3					
4					

Number of guns to be used simultaneously:

SPRAY MATERIAL DESCRIPTION AND SPECIFICATIONS

12. Type of Spray Material Used	13. Type of Material Coated	14. Max. Usage (gal/day)	15. Solid TAP/HAP Content (lb/gal)	16. VOC TAP/HAP Content (lb/gal)	17. MSDS Atta (Y/N)
See E.I.	Metal	See E.I.	See E.I	See E.I.	Y

REQUEST FOR PERMIT LIMITATIONS

18. Are you requesting any permit limits? ☐ No ☒ Yes. If Yes, check all that apply below and fill in requested limit(s)

☒ Operation Hour Limits: 3,000
☐ Production Limits:
☐ Material Usage Limits:
☐ Other:

19. Rationale for Requesting the Limit(s):

EMISSION CONTROL DEVICE (FILTER[b]) DESCRIPTION AND SPECIFICATIONS

Stack Served	20. Filter Manufacturer	21. Model	22. PM Control Efficiency(%)[a]	23. Dimension (Total Area, Thickness and Number of Filters)
Stack 1	Filter Systems	PA22-2020	99.03 %	20"x20" x2.5" (One filter)
Stack 2		(H/D Fiber Glass)		
Stack 3				
Stack 4				

Notes: a. Provide either stack test data or vendor's documentation to support the control efficiency specified above.
b. Fill out and submit appropriate control equipment form(s) if this booth has a control device(s) other than a filter system.

BOOTH OPERATING SCHEDULE (indicate hours/day, hours/year, or other)

24. Actual Operation:	25. Maximum Operation:
2,600 Hours a Year	3,000 Hours a Year

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Emissions Unit - General **Form EU0**
Revision 4
08/28/08

Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name:	2. Facility Name:	3. Facility ID No:
Double L Manufacturing	Apache River,LLC	067-0042

4. Brief Project Description: Permit to Construct

EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

5.	Emissions Unit (EU) Name:	SPRAY BOOTH
6.	EU ID Number:	SPRAY BOOTH-01
7.	EU Type:	☒ New Source ☐ Unpermitted Existing Source ☐ Modification to a Permitted Source – Previous Permit #: Date Issued:
8.	Manufacturer:	SPRAYLINE
9.	Model:	SEMI DOWN DRAFT 264417
10..	Maximum Capacity:	NA
11.	Date of Construction:	2012
12.	Date of Modification (if any):	N/A
13.	Is this a Controlled Emission Unit?	☐ No ☒ Yes If Yes, complete the following section. If No, go to line 22.

EMISSIONS CONTROL EQUIPMENT

14. Control Equipment Name and ID: Filters

15. Date of Installation: 2012 16. Date of Modification (if any):

17. Manufacturer and Model Number: Filter Systems PA22-2020

18. ID(s) of Emission Unit Controlled: NA

19. Is operating schedule different than emission units(s) involved? ☐ Yes ☐ No

20. Does the manufacturer guarantee the control efficiency of the control equipment? ☐ Yes ☐ No (If Yes, attach and label manufacturer guarantee)

	Pollutant Controlled					
	PM	PM10	SO_2	NOx	VOC	CO
Control Efficiency	99.03	99.03	NA	NA	NA	NA

21. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

22.	Actual Operation:	2,600 HOURS A YEAR
23.	Maximum Operation:	3,000 HOURS A YEAR

REQUESTED LIMITS

24. Are you requesting any permit limits? ☒ Yes ☐ No (If Yes, indicate all that apply below)

☒ Operation Hour Limit(s):	3,000
☐ Production Limit(s):	
☐ Material Usage Limit(s):	
☐ Limits Based on Stack Testing:	Please attach all relevant stack testing summary reports
☐ Other:	

25. Rationale for Requesting the Limit(s): OPERATIONAL CAPACITY

APPENDIX B

EMISSION CALCULATIONS
(PROVIDED ON CD)

Double L Below Regulatory Concern (BRC) Emissions
IDAPA 58.01.01, Section 221.02

Criteria Pollutant	Significant Emission Rate (T/yr)	Emission Rate Below Regulatory Concern T/yr	Facility PTE T/yr	PTE Greater Than BRC
PM10	15	1.5	0.26	No
PM2.5	10	1.00	0.26	No
CO	100	10	1.0	No
NO x	40	4.00	1.22E+00	No
SO2	40	4.00	7.31E-03	No
Lead	0.6	0.06	4.041E-05	No
Ozone (VOC)	40	4.00	23.1	Yes [1]

[1] Ozone modeling is conducted an air shed basis; photochemical modleing for VOC emissions is not required for individual minor sources

Double L
Facility-Wide Criteria Pollutants

	PM_{10}		$PM_{2.5}$		SO_2		NOx		CO		VOC		Lead	
Emission Source	lb/hr	T/Yr	lb/hr	T/Yr	lb/hr	T/Yr	lb/hr	T/Yr	lb/hr	T/Yr	lb/hr	T/Yr	lb/hr	T/Yr
Grinding - insignificant	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Welding	4.77E-04	7.15E-04	4.77E-04	7.15E-04	—	—	—	—	—	—	—	—	2.29E-05	3.43E-05
Painting/Coating	0.11	0.17	0.11	0.17	—	—	—	—	—	—	15.36	23.05	—	—
Natural Gas Combustion (8.26 MMBtu)	6.17E-02	9.25E-02	6.17E-02	9.25E-02	4.87E-03	7.31E-03	8.12E-01	1.22E+00	6.82E-01	1.02E+00	4.46E-02	6.70E-02	4.06E-06	6.09E-06
Post Project Totals	0.18	0.26	0.18	0.26	4.87E-03	7.31E-03	8.12E-01	1.22E+00	6.82E-01	1.02E+00	1.54E+01	2.31E+01	2.69E-05	4.04E-05

APPENDIX C

MATERIAL SAFETY DATA SHEETS

MATERIAL SAFETY DATA SHEET

F75BV2
03 00

DATE OF PREPARATION
Feb 25, 2012

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER
F75BV2
PRODUCT NAME
Silicone Alkyd DTM Enamel, Black Hi-Bild
MANUFACTURER'S NAME
THE SHERWIN-WILLIAMS COMPANY
101 Prospect Avenue N.W.
Cleveland, OH 44115

Telephone Numbers and Websites

Product Information	www.oem.sherwin-williams.com
Regulatory Information	(216) 566-2902
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
**for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)*	

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
33	64742-88-7	**Mineral Spirits**		
		ACGIH TLV	100 PPM	2 mm
		OSHA PEL	100 PPM	
4	64742-95-6	**Light Aromatic Hydrocarbons**		
		ACGIH TLV	Not Available	3.8 mm
		OSHA PEL	Not Available	
2	108-67-8	**1,3,5-Trimethylbenzene**		
		ACGIH TLV	25 PPM	2 mm
		OSHA PEL	25 PPM	
7	95-63-6	**1,2,4-Trimethylbenzene**		
		ACGIH TLV	25 PPM	2.03 mm
		OSHA PEL	25 PPM	
2	1333-86-4	**Carbon Black**		
		ACGIH TLV	3.5 MG/M3	
		OSHA PEL	3.5 MG/M3	

SECTION 3 — HAZARDS IDENTIFICATION

ROUTES OF EXPOSURE
INHALATION of vapor or spray mist.
EYE or SKIN contact with the product, vapor or spray mist.

HMIS Codes

Health	2*
Flammability	2
Reactivity	0

EFFECTS OF OVEREXPOSURE
EYES: Irritation.
SKIN: Prolonged or repeated exposure may cause irritation.
INHALATION: Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.
Prolonged overexposure to hazardous ingredients in Section 2 may cause adverse chronic effects to the following organs or systems:
- the liver
- the urinary system
- the reproductive system

SIGNS AND SYMPTOMS OF OVEREXPOSURE
Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.
Redness and itching or burning sensation may indicate eye or excessive skin exposure.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
None generally recognized.
CANCER INFORMATION
For complete discussion of toxicology data refer to Section 11.

SECTION 4 — FIRST AID MEASURES

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.
SKIN: Wash affected area thoroughly with soap and water.
Remove contaminated clothing and launder before re-use.
INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.
INGESTION: Do not induce vomiting. Get medical attention immediately.

SECTION 5 — FIRE FIGHTING MEASURES

FLASH POINT	LEL	UEL	FLAMMABILITY CLASSIFICATION
100 °F PMCC	0.7	7.0	Combustible, Flash above 99 and below 200 °F

EXTINGUISHING MEDIA
Carbon Dioxide, Dry Chemical, Foam
UNUSUAL FIRE AND EXPLOSION HAZARDS
Closed containers may explode when exposed to extreme heat.
Application to hot surfaces requires special precautions.
During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.
SPECIAL FIRE FIGHTING PROCEDURES
Full protective equipment including self-contained breathing apparatus should be used.
Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Remove all sources of ignition. Ventilate the area.
Remove with inert absorbent.

SECTION 7 — HANDLING AND STORAGE

STORAGE CATEGORY
DOL Storage Class II
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE
Contents are COMBUSTIBLE. Keep away from heat and open flame.
Consult NFPA Code. Use approved Bonding and Grounding procedures.
Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

PRECAUTIONS TO BE TAKEN IN USE
Use only with adequate ventilation.
Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.
Wash hands after using.
This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).
VENTILATION
Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.
RESPIRATORY PROTECTION
If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.
When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.
PROTECTIVE GLOVES
Wear gloves which are recommended by glove supplier for protection against materials in Section 2.
EYE PROTECTION
Wear safety spectacles with unperforated sideshields.
OTHER PRECAUTIONS
Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT	8.09 lb/gal	968 g/l
SPECIFIC GRAVITY	0.97	
BOILING POINT	300 - 395 °F	148 - 201 °C
MELTING POINT	Not Available	
VOLATILE VOLUME	59%	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	N.A.	

VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)

3.96 lb/gal	475 g/l	Less Water and Federally Exempt Solvents
3.96 lb/gal	475 g/l	Emitted VOC

SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable

CONDITIONS TO AVOID

None known.

INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

SECTION 11 — TOXICOLOGICAL INFORMATION

CHRONIC HEALTH HAZARDS

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Carbon Black is classified by IARC as possibly carcinogenic to humans (group 2B) based on experimental animal data, however, there is insufficient evidence in humans for its carcinogenicity.

TOXICOLOGY DATA

CAS No.	Ingredient Name			
64742-88-7	**Mineral Spirits**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
64742-95-6	**Light Aromatic Hydrocarbons**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
108-67-8	**1,3,5-Trimethylbenzene**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
95-63-6	**1,2,4-Trimethylbenzene**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
1333-86-4	**Carbon Black**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available

SECTION 12 — ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

No data available.

SECTION 13 — DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

US Ground (DOT)

May be Classed as a Combustible Liquid for U.S. Ground.
UN1263, PAINT, 3, PG III, (ERG#128)

DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Xylenes (isomers and mixture) 100 lb RQ

Bulk Containers may be Shipped as (check reportable quantities):

UN1263, PAINT, COMBUSTIBLE LIQUID, PG III, (ERG#128)

Canada (TDG)

May be Classed as a Combustible Liquid for Canadian Ground.
UN1263, PAINT, CLASS 3, PG III, (ERG#128)

IMO

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.
UN1263, PAINT, CLASS 3, PG III, (38 C c.c.), EmS F-E, S-E, ADR (D/E)

IATA/ICAO

UN1263, PAINT, 3, PG III

SECTION 15 — REGULATORY INFORMATION

SARA 313 *(40 CFR 372.65C)* SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
95-63-6	1,2,4-Trimethylbenzene	7	
	Zinc Compound	3	1.9

CALIFORNIA PROPOSITION 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

SECTION 16 — OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

MATERIAL SAFETY DATA SHEET

F75RV2
01 00

DATE OF PREPARATION
Apr 11, 2012

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER
F75RV2
PRODUCT NAME
Silicone Alkyd DTM Enamel, Flame Red
MANUFACTURER'S NAME
THE SHERWIN-WILLIAMS COMPANY
101 Prospect Avenue N.W.
Cleveland, OH 44115

Telephone Numbers and Websites

Product Information	www.oem.sherwin-williams.com
Regulatory Information	(216) 566-2902
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
**for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)*	

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units		Vapor Pressure
32	64742-88-7	**Mineral Spirits**			
		ACGIH TLV	100 PPM		2 mm
		OSHA PEL	100 PPM		
4	64742-95-6	**Light Aromatic Hydrocarbons**			
		ACGIH TLV	Not Available		3.8 mm
		OSHA PEL	Not Available		
2	108-67-8	**1,3,5-Trimethylbenzene**			
		ACGIH TLV	25 PPM		2 mm
		OSHA PEL	25 PPM		
6	95-63-6	**1,2,4-Trimethylbenzene**			
		ACGIH TLV	25 PPM		2.03 mm
		OSHA PEL	25 PPM		

SECTION 3 — HAZARDS IDENTIFICATION

ROUTES OF EXPOSURE
INHALATION of vapor or spray mist.
EYE or SKIN contact with the product, vapor or spray mist.

HMIS Codes

Health	2
Flammability	2
Reactivity	0

EFFECTS OF OVEREXPOSURE
EYES: Irritation.
SKIN: Prolonged or repeated exposure may cause irritation.
INHALATION: Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.
Prolonged overexposure to hazardous ingredients in Section 2 may cause adverse chronic effects to the following organs or systems:
- the liver
- the urinary system
- the reproductive system

SIGNS AND SYMPTOMS OF OVEREXPOSURE
Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.
Redness and itching or burning sensation may indicate eye or excessive skin exposure.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
None generally recognized.
CANCER INFORMATION
For complete discussion of toxicology data refer to Section 11.

SECTION 4 — FIRST AID MEASURES

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.
SKIN: Wash affected area thoroughly with soap and water.
Remove contaminated clothing and launder before re-use.
INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.
INGESTION: Do not induce vomiting. Get medical attention immediately.

SECTION 5 — FIRE FIGHTING MEASURES

FLASH POINT	LEL	UEL	FLAMMABILITY CLASSIFICATION
100 °F PMCC	0.7	7.0	Combustible, Flash above 99 and below 200 °F

EXTINGUISHING MEDIA
Carbon Dioxide, Dry Chemical, Foam
UNUSUAL FIRE AND EXPLOSION HAZARDS
Closed containers may explode when exposed to extreme heat.
Application to hot surfaces requires special precautions.
During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.
SPECIAL FIRE FIGHTING PROCEDURES
Full protective equipment including self-contained breathing apparatus should be used.
Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Remove all sources of ignition. Ventilate the area.
Remove with inert absorbent.

SECTION 7 — HANDLING AND STORAGE

STORAGE CATEGORY
DOL Storage Class II
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE
Contents are COMBUSTIBLE. Keep away from heat and open flame.
Consult NFPA Code. Use approved Bonding and Grounding procedures.
Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

PRECAUTIONS TO BE TAKEN IN USE
Use only with adequate ventilation.
Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.
Wash hands after using.
This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).
VENTILATION
Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.
RESPIRATORY PROTECTION
If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.
When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.
PROTECTIVE GLOVES
Wear gloves which are recommended by glove supplier for protection against materials in Section 2.
EYE PROTECTION
Wear safety spectacles with unperforated sideshields.
OTHER PRECAUTIONS
Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT	8.13 lb/gal	974 g/l
SPECIFIC GRAVITY	0.98	
BOILING POINT	300 - 395 °F	148 - 201 °C
MELTING POINT	Not Available	
VOLATILE VOLUME	57%	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	N.A.	

VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)

3.81 lb/gal	457 g/l	Less Water and Federally Exempt Solvents
3.81 lb/gal	457 g/l	Emitted VOC

SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable

CONDITIONS TO AVOID

None known.

INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

SECTION 11 — TOXICOLOGICAL INFORMATION

CHRONIC HEALTH HAZARDS

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

TOXICOLOGY DATA

CAS No.	Ingredient Name			
64742-88-7	Mineral Spirits			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
64742-95-6	Light Aromatic Hydrocarbons			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
108-67-8	1,3,5-Trimethylbenzene			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
95-63-6	1,2,4-Trimethylbenzene			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available

SECTION 12 — ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

No data available.

SECTION 13 — DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

US Ground (DOT)
May be Classed as a Combustible Liquid for U.S. Ground.
UN1263, PAINT, 3, PG III, (ERG#128)
DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities
Xylenes (isomers and mixture) 100 lb RQ
Bulk Containers may be Shipped as (check reportable quantities):
UN1263, PAINT, COMBUSTIBLE LIQUID, PG III, (ERG#128)
Canada (TDG)
May be Classed as a Combustible Liquid for Canadian Ground.
UN1263, PAINT, CLASS 3, PG III, (ERG#128)
IMO
5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.
UN1263, PAINT, CLASS 3, PG III, (38 C c.c.), EmS F-E, S-E, ADR (D/E)
IATA/ICAO
UN1263, PAINT, 3, PG III

SECTION 15 — REGULATORY INFORMATION

SARA 313 *(40 CFR 372.65C)* SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
95-63-6	1,2,4-Trimethylbenzene	6	
	Zinc Compound	3	1.8

CALIFORNIA PROPOSITION 65
WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.
TSCA CERTIFICATION
All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

SECTION 16 — OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

MATERIAL SAFETY DATA SHEET

F75WV1
04 00

DATE OF PREPARATION
Feb 25, 2012

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER
F75WV1
PRODUCT NAME
Silicone Alkyd DTM Enamel, White
MANUFACTURER'S NAME
THE SHERWIN-WILLIAMS COMPANY
101 Prospect Avenue N.W.
Cleveland, OH 44115

Telephone Numbers and Websites

Product Information	www.oem.sherwin-williams.com
Regulatory Information	(216) 566-2902
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
**for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)*	

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
24	64742-88-7	**Mineral Spirits**		
		ACGIH TLV	100 PPM	2 mm
		OSHA PEL	100 PPM	
4	64742-95-6	**Light Aromatic Hydrocarbons**		
		ACGIH TLV	Not Available	3.8 mm
		OSHA PEL	Not Available	
1	108-67-8	**1,3,5-Trimethylbenzene**		
		ACGIH TLV	25 PPM	2 mm
		OSHA PEL	25 PPM	
6	95-63-6	**1,2,4-Trimethylbenzene**		
		ACGIH TLV	25 PPM	2.03 mm
		OSHA PEL	25 PPM	
25	13463-67-7	**Titanium Dioxide**		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	10 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	

SECTION 3 — HAZARDS IDENTIFICATION

ROUTES OF EXPOSURE
INHALATION of vapor or spray mist.
EYE or SKIN contact with the product, vapor or spray mist.

HMIS Codes

Health	2*
Flammability	2
Reactivity	0

EFFECTS OF OVEREXPOSURE
EYES: Irritation.
SKIN: Prolonged or repeated exposure may cause irritation.
INHALATION: Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.
Prolonged overexposure to hazardous ingredients in Section 2 may cause adverse chronic effects to the following organs or systems:
- the liver
- the urinary system
- the reproductive system

SIGNS AND SYMPTOMS OF OVEREXPOSURE
Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.
Redness and itching or burning sensation may indicate eye or excessive skin exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
None generally recognized.

CANCER INFORMATION
For complete discussion of toxicology data refer to Section 11.

SECTION 4 — FIRST AID MEASURES

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.
SKIN: Wash affected area thoroughly with soap and water.
Remove contaminated clothing and launder before re-use.
INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.
INGESTION: Do not induce vomiting. Get medical attention immediately.

SECTION 5 — FIRE FIGHTING MEASURES

FLASH POINT	LEL	UEL	FLAMMABILITY CLASSIFICATION
100 °F PMCC	0.7	7.0	Combustible, Flash above 99 and below 200 °F

EXTINGUISHING MEDIA
Carbon Dioxide, Dry Chemical, Foam
UNUSUAL FIRE AND EXPLOSION HAZARDS
Closed containers may explode when exposed to extreme heat.
Application to hot surfaces requires special precautions.
During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.
SPECIAL FIRE FIGHTING PROCEDURES
Full protective equipment including self-contained breathing apparatus should be used.
Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Remove all sources of ignition. Ventilate the area.
Remove with inert absorbent.

SECTION 7 — HANDLING AND STORAGE

STORAGE CATEGORY
DOL Storage Class II
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE
Contents are COMBUSTIBLE. Keep away from heat and open flame.
Consult NFPA Code. Use approved Bonding and Grounding procedures.
Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

PRECAUTIONS TO BE TAKEN IN USE
Use only with adequate ventilation.
Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.
Wash hands after using.
This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).
VENTILATION
Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.
RESPIRATORY PROTECTION
If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.
When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.
PROTECTIVE GLOVES
Wear gloves which are recommended by glove supplier for protection against materials in Section 2.
EYE PROTECTION
Wear safety spectacles with unperforated sideshields.
OTHER PRECAUTIONS
Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT	9.96 lb/gal	1193 g/l
SPECIFIC GRAVITY	1.20	
BOILING POINT	300 - 395 °F	148 - 201 °C
MELTING POINT	Not Available	
VOLATILE VOLUME	55%	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	N.A.	

VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)

3.72 lb/gal	446 g/l	Less Water and Federally Exempt Solvents
3.72 lb/gal	446 g/l	Emitted VOC

SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable

CONDITIONS TO AVOID

None known.

INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

SECTION 11 — TOXICOLOGICAL INFORMATION

CHRONIC HEALTH HAZARDS

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

IARC's Monograph No. 93 reports there is sufficient evidence of carcinogenicity in experimental rats exposed to titanium dioxide but inadequate evidence for carcinogenicity in humans and has assigned a Group 2B rating. In addition, the IARC summary concludes, "No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium is bound to other materials, such as paint."

TOXICOLOGY DATA

CAS No.	Ingredient Name			
64742-88-7	**Mineral Spirits**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
64742-95-6	**Light Aromatic Hydrocarbons**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
108-67-8	**1,3,5-Trimethylbenzene**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
95-63-6	**1,2,4-Trimethylbenzene**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
13463-67-7	**Titanium Dioxide**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available

SECTION 12 — ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

No data available.

SECTION 13 — DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

US Ground (DOT)

May be Classed as a Combustible Liquid for U.S. Ground.
UN1263, PAINT, 3, PG III, (ERG#128)

DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Xylenes (isomers and mixture) 100 lb RQ

Bulk Containers may be Shipped as (check reportable quantities):

UN1263, PAINT, COMBUSTIBLE LIQUID, PG III, (ERG#128)

Canada (TDG)

May be Classed as a Combustible Liquid for Canadian Ground.
UN1263, PAINT, CLASS 3, PG III, (ERG#128)

IMO

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.
UN1263, PAINT, CLASS 3, PG III, (38 C c.c.), EmS F-E, S-E, ADR (D/E)

IATA/ICAO

UN1263, PAINT, 3, PG III

SECTION 15 — REGULATORY INFORMATION

SARA 313 *(40 CFR 372.65C)* SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
95-63-6	1,2,4-Trimethylbenzene	6	
	Zinc Compound	3	2.0

CALIFORNIA PROPOSITION 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

SECTION 16 — OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

MATERIAL SAFETY DATA SHEET

F75YV1
05 00

DATE OF PREPARATION
Feb 25, 2012

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER
F75YV1
PRODUCT NAME
Silicone Alkyd DTM Enamel, Equipment Yellow
MANUFACTURER'S NAME
THE SHERWIN-WILLIAMS COMPANY
101 Prospect Avenue N.W.
Cleveland, OH 44115

Telephone Numbers and Websites

Product Information	www.oem.sherwin-williams.com
Regulatory Information	(216) 566-2902
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
**for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)*	

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
30	64742-88-7	**Mineral Spirits**		
		ACGIH TLV	100 PPM	2 mm
		OSHA PEL	100 PPM	
3	64742-95-6	**Light Aromatic Hydrocarbons**		
		ACGIH TLV	Not Available	3.8 mm
		OSHA PEL	Not Available	
1	108-67-8	**1,3,5-Trimethylbenzene**		
		ACGIH TLV	25 PPM	2 mm
		OSHA PEL	25 PPM	
5	95-63-6	**1,2,4-Trimethylbenzene**		
		ACGIH TLV	25 PPM	2.03 mm
		OSHA PEL	25 PPM	
0.1	136-52-7	**Cobalt 2-Ethylhexanoate**		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	
2	13463-67-7	**Titanium Dioxide**		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	10 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	

SECTION 3 — HAZARDS IDENTIFICATION

ROUTES OF EXPOSURE
INHALATION of vapor or spray mist.
EYE or SKIN contact with the product, vapor or spray mist.

HMIS Codes

Health	2*
Flammability	2
Reactivity	0

EFFECTS OF OVEREXPOSURE
EYES: Irritation.
SKIN: Prolonged or repeated exposure may cause irritation.
INHALATION: Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.
Prolonged overexposure to hazardous ingredients in Section 2 may cause adverse chronic effects to the following organs or systems:
- the liver
- the urinary system
- the reproductive system

SIGNS AND SYMPTOMS OF OVEREXPOSURE
Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.
Redness and itching or burning sensation may indicate eye or excessive skin exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
None generally recognized.
CANCER INFORMATION
For complete discussion of toxicology data refer to Section 11.

SECTION 4 — FIRST AID MEASURES

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.
SKIN: Wash affected area thoroughly with soap and water.
Remove contaminated clothing and launder before re-use.
INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.
INGESTION: Do not induce vomiting. Get medical attention immediately.

SECTION 5 — FIRE FIGHTING MEASURES

FLASH POINT	LEL	UEL	FLAMMABILITY CLASSIFICATION
105 °F PMCC	0.7	7.0	Combustible, Flash above 99 and below 200 °F

EXTINGUISHING MEDIA
Carbon Dioxide, Dry Chemical, Foam
UNUSUAL FIRE AND EXPLOSION HAZARDS
Closed containers may explode when exposed to extreme heat.
Application to hot surfaces requires special precautions.
During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.
SPECIAL FIRE FIGHTING PROCEDURES
Full protective equipment including self-contained breathing apparatus should be used.
Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Remove all sources of ignition. Ventilate the area.
Remove with inert absorbent.

SECTION 7 — HANDLING AND STORAGE

STORAGE CATEGORY
DOL Storage Class II
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE
Contents are COMBUSTIBLE. Keep away from heat and open flame.
Consult NFPA Code. Use approved Bonding and Grounding procedures.
Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

PRECAUTIONS TO BE TAKEN IN USE
Use only with adequate ventilation.
Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.
Wash hands after using.
This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).
VENTILATION
Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.
RESPIRATORY PROTECTION
If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.
When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.
PROTECTIVE GLOVES
Wear gloves which are recommended by glove supplier for protection against materials in Section 2.
EYE PROTECTION
Wear safety spectacles with unperforated sideshields.
OTHER PRECAUTIONS
Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT	8.81 lb/gal	1055 g/l
SPECIFIC GRAVITY	1.06	
BOILING POINT	300 - 395 °F	148 - 201 °C
MELTING POINT	Not Available	
VOLATILE VOLUME	57%	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	N.A.	

VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)

3.81 lb/gal	456 g/l	Less Water and Federally Exempt Solvents
3.81 lb/gal	456 g/l	Emitted VOC

SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable

CONDITIONS TO AVOID

None known.

INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

SECTION 11 — TOXICOLOGICAL INFORMATION

CHRONIC HEALTH HAZARDS

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Cobalt and cobalt compounds are classified by IARC as possibly carcinogenic to humans (group 2B) based on experimental animal data, however, there is inadequate evidence in humans for its carcinogenicity.

IARC's Monograph No. 93 reports there is sufficient evidence of carcinogenicity in experimental rats exposed to titanium dioxide but inadequate evidence for carcinogenicity in humans and has assigned a Group 2B rating. In addition, the IARC summary concludes, "No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium is bound to other materials, such as paint."

TOXICOLOGY DATA

CAS No.	Ingredient Name			
64742-88-7	Mineral Spirits			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
64742-95-6	Light Aromatic Hydrocarbons			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
108-67-8	1,3,5-Trimethylbenzene			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
95-63-6	1,2,4-Trimethylbenzene			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
136-52-7	Cobalt 2-Ethylhexanoate			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
13463-67-7	Titanium Dioxide			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available

SECTION 12 — ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

No data available.

SECTION 13 — DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.
Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

US Ground (DOT)
May be Classed as a Combustible Liquid for U.S. Ground.
UN1263, PAINT, 3, PG III, (ERG#128)

DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities
Xylenes (isomers and mixture) 100 lb RQ

Bulk Containers may be Shipped as (check reportable quantities):
UN1263, PAINT, COMBUSTIBLE LIQUID, PG III, (ERG#128)

Canada (TDG)
May be Classed as a Combustible Liquid for Canadian Ground.
UN1263, PAINT, CLASS 3, PG III, (ERG#128)

IMO
5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.
UN1263, PAINT, CLASS 3, PG III, (41 C c.c.), EmS F-E, S-E, ADR (D/E)

IATA/ICAO
UN1263, PAINT, 3, PG III

SECTION 15 — REGULATORY INFORMATION

SARA 313 *(40 CFR 372.65C)* SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
95-63-6	1,2,4-Trimethylbenzene	5	
	Cobalt Compound	0.1	0.02
	Zinc Compound	3	1.8

CALIFORNIA PROPOSITION 65
WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

TSCA CERTIFICATION
All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

SECTION 16 — OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

ENVIRONMENTAL DATA SHEET

(Certified Product Data Sheet)

Date of Preparation
Mar 22, 2012

20 00 [2191]

PRODUCT NUMBER
K119-SW

PRODUCT NAME
R7K119 Lacquer Thinner

MANUFACTURER'S NAME
THE SHERWIN-WILLIAMS COMPANY
101 Prospect Avenue N.W.
Cleveland, OH 44115

This document includes all data required by 40 CFR 63.801(a) for a Certified Product Data Sheet under criteria specified in 40 CFR 63.805(a). All data given below are MAXIMUM THEORETICAL VALUES based on the product AS CURRENTLY FORMULATED. Variations may occur on individual batches due to adjustments made during production.

Product Weight
6.64 lb/gal

Specific Gravity
0.80

FLASH POINT
1 °F PMCC

Hazard Category (for SARA 311.312)
| Acute | Chronic | Fire |

Volatile Ingredients

Chemical / Compound	SARA 302 EHS	CERCLA	SARA 313 TC	HAPS 112	% by Weight	% by Volume
Lt. Aliphatic Hydrocarbon Solvent 64742-89-8	N	N	N	N	25	27
Toluene 108-88-3	N	Y	Y	Y	33	30
Ethylbenzene 100-41-4	N	Y	Y	Y	0.8	< 1
Xylene 1330-20-7	N	Y	Y	Y	5	4
Methanol 67-56-1	N	Y	Y	Y	4	4
2-Propanol 67-63-0	N	N	N	N	10	11
Acetone 67-64-1	N	Y	N	N	21	21
2-Butoxyethyl Acetate 112-07-2	N	N	***	***	1	1

Regulated Compounds

	SARA 302 EHS	CERCLA	SARA 313 TC	HAPS 112	% by Weight	% by Volume
*** Glycol Ethers (SARA)	N	N	Y	N	1	
*** Glycol Ethers (HAPS)	N	N	N	Y	1	

Volatile Organic Compounds (follows U.S. EPA VOC Data Sheet)

A.	**Coating Density**			6.64 lb/gal	795 g/l
B.	**Total Volatiles**			100.0 % by wt.	100.0 % by vol.
C.	**Federally exempt solvents:**				
		Water		0.0 % by wt.	0.0 % by vol.
		Acetone		20.9 % by wt.	21.1 % by vol.
D.	**Organic Volatiles**			79.1 % by wt.	78.9 % by vol.
E.	**Percent Non-Volatile**			0.0 % by wt.	0.0 % by vol.
F.	**VOC Content**	5.25 lb/gal	629 g/l	total	
	1.	6.65 lb/gal	797 g/l	less exempt solvents	
	2.	0.00 lb/gal	0 g/l	of solids	
		0.00 lb/lb	0.00 kg/kg	of solids	

Hazardous Air Pollutants (Clean Air Act, Section 112(b))

Volatile HAPS	2.92	lb/gal	0.349	kg/l	43.97	% by wt.
		lb/gal		kg/l of solids	Not applicable	
		lb/lb		kg/kg of solids	Not applicable	

Air Quality Data

Density of Organic Solvent Blend
6.64 lb/gal
Photochemically Reactive
Yes
Maximum Incremental Reactivity (MIR) (California Air Resources Board Aerosol Products Regulation, MIR Value July 18, 2001)
2.37
Maximum Incremental Reactivity (MIR) (per US EPA Aerosol Ctg Rule)
2.25

Waste Disposal

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

824

MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Date of Prep: 05/26/05

SECTION 1

SUNNYSIDE CORPORATION
225 CARPENTER AVENUE
WHEELING, ILLINOIS 60090 (847) 541-5700
EMERGENCY TELEPHONE (800) 424-9300

FOR INFORMATION: (847) 541-5700
- SUNNYSIDE CORPORATION
- CHEM TREC

Product Class: Petroleum Solvent
Trade Name: SOLVENT 100

Manufacturer's Code: 824
NPCA HMIS: Health: 2
Fire: 2
Reactivity: 0

Product Appearance and Odor: Clear, water-white liquid; aromatic hydrocarbon odor.

SECTION 2 – HAZARDOUS INGREDIENTS

OCCUPATIONAL EXPOSURE LIMITS

INGREDIENT	CAS #	PERCENT	ACGIH TLV (TWA)	ACGIH TLV (STEL)	OSHA PEL (TWA)	OSHA PEL (STEL)	VAPOR PRESSURE
Light Aromatic Solvent Naphtha	64742-95-6		Not. Est.	Not. Est.	Not. Est.	Not. Est.	<10 MM Hg @ 25° C.
1,2,4 - Trimethylbenzene	95-63-6		25 PPM		25 PPM		Not available
Xylene	1330-20-7		100 PPM *(A4)	150 PPM *(A4)	100 PPM	150 PPM	7 MM Hg. @ 20° C.
Cumene	98-82-8		50 PPM (Skin)		50 PPM (Skin)		Not available
Ethyl Benzene	100-41-4		100 PPM	125 PPM	100 PPM	125 PPM	Not available
Trimethylbenzenes	25551-13-7		25 PPM		25 PPM		Not available

*Not classifiable as a Human Carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data.

SECTION 3 – EMERGENCY AND FIRST AID PROCEDURES

Eye Contact: Flush eyes, with large amounts of water until irritation subsides. Get medical attention.

Skin Contact: Remove contaminated clothing/shoes and wipe excess from skin. Flush skin with water. Follow by washing with soap and water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned.

Inhalation: Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention.

Ingestion: If swallowed, do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.

SECTION 4 – PHYSICAL DATA

The following data represent approximate or typical values. They do not constitute product specifications.

Boiling Range: 310-350° (F)
Evaporation Rate: Slower than ether
Weight Per Gallon: 7.28 lbs.
Solubility in Water: Negligible

Vapor Density: Heavier than air
% Volatile By Volume: Approx. 100%

SECTION 5 – FIRE AND EXPLOSION DATA

Flammability Classification:	Combustible Liquid - Class II
Flash Point:	112º(F) Tag. Closed cup
Autoignition Temperature:	910ºF
Lower Explosive Limit:	.5 %
Extinguishing Media:	Carbon dioxide, foam, dry chemical, water spray. Do not use direct water stream; it will spread fire.
Unusual Fire and Explosion Hazards:	Do not store or mix with strong oxidants.
Special Fire Fighting Procedures:	Use air-supplied rescue equipment for enclosed areas. Cool exposed containers with water.

SECTION 6 – HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE:	50 PPM (Recommended by Exxon Co.- based on total hydrocarbon composition)
EFFECTS OF OVEREXPOSURE	
Acute Eye Contact:	Liquid is minimally irritating to the eyes. High vapor concentrations may be irritating.
Skin Contact:	Liquid is slightly irritating to the skin. Prolonged or repeated liquid contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis.
Inhalation:	High vapor concentrations may be irritating to the nose, throat and respiratory tract and may cause central nervous system depression, including death.
Ingestion:	Ingestion of product may result in vomiting; aspiration (breathing) of vomitus into the lungs must be avoided as even small quantities may result in aspiration pneumonitis, possibly progressing to death.
Chronic Effects:	Repeated skin contact may aggravate an existing dermatitis (skin condition). Pre-existing eye and respiratory disorders may be aggravated by exposure to this product. This product contains Ethyl Benzene. A draft report on a study conducted by the National Toxicology program states that lifetime inhalation exposure of rats and mice to concentrations of Ethyl Benzene (750 ppm) resulted in increases in certain types of caner, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentration of Ethyl Benzene (75 ppm or 250 ppm). The draft report does not address the relevance of these results to humans. The International Agency for Research on Cancer has evaluated ethylbenzene and classified it as a possible human carcinogen (Group 2B) based on sufficient evidence for carcinogenicity in experimental animals, but inadequate evidence for cancer in exposed humans.
Carcinogenicity:	This product has not been identified as a carcinogen by NTP, IARC, or OSHA.
Target Organs:	A six week inhalation study with Xylene produced hearing loss in rats.
Developmental:	Both mixed xylenes and the individual isomers produced limited evidence of developmental toxicity in laboratory animals. Inhalation and oral administration of xylene resulted in decreased fetal weight, increased incidences of delayed ossification, skeletal variations and resorptions. Inhalation of C9 aromatic hydrocarbons by pregnant mice and rats from gestational days 6 to 15 resulted in decreased fetal weight.

SECTION 7 – REACTIVITY DATA

Stability:	Stable
Conditions to Avoid:	Heat, sparks and flame.
Incompatibility (Materials to Avoid):	Avoid contact with strong acids, selected amines, strong bases and oxidizing agents.
Hazardous Decomposition Products:	Thermal decomposition may yield carbon dioxide and carbon monoxide.
Hazardous Polymerization:	Will not occur.

SECTION 8 – SPILL OR LEAK PROCEDURES

Steps to be taken in case material is spilled or released: Remove ignition sources, evacuate area, avoid breathing vapor or contact with liquid. Recover free liquid or stop leak if possible. Dike large spills and use absorbent material for small spills. Keep spilled material out of sewers, ditches and bodies of water.

Waste disposal method: Incinerate under safe conditions; dispose of in accordance with local, state and federal regulations.

SECTION 9 – SAFE HANDLING AND USE INFORMATION

Respiratory Protection:	Appropriate vapor canister, self-contained breathing apparatus or supplied-air hose mask, if needed.
Ventilation:	Sufficient, in volume and pattern, to keep workroom concentration below current applicable OSHA safety and health requirements. See Section 2. Use explosion-proof equipment. No smoking.
Protective Gloves:	Rubber or neoprene.
Eye Protection:	Chemical safety goggles.
Other Protective Equipment:	Impervious clothing or boots, if needed.

SECTION 10 – SPECIAL PRECAUTIONS

Dept. of Labor Storage Category:	Combustible Liquid - Class II
Hygienic Practices:	Keep away from heat, sparks and open flame. Keep containers closed when not in use. Avoid eye contact. Avoid prolonged or repeated contact with skin. Wash skin with soap and water after contact.
Additional Precautions:	Ground containers when transferring liquid to prevent static accumulation and discharge. Additional information regarding safe handling of products with static accumulation potential can be ordered by contacting the American Petroleum Institute (API) for API Recommended Practice 2003, entitled "Protection Against Ignitions Arising Out of Static, Lighting, and Stray Currents" (American Petroleum Institute, 1720 L Street Northwest, Washington,DC 20005), or the National Fire Protection Association (NFPA) for NFPA 77 entitled "Static Electricity" (National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101).
Empty Container Warning:	"Empty" containers retain residue (liquid and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks or other sources of ignition; they may explode and cause injury or death. Do not attempt to clean since residue is difficult to remove. "Empty" drums should be completely drained, properly bunged and promptly returned to supplier or disposed of in an environmentally safe manner and in accordance with governmental regulations.

SECTION 11 – ADDITIONAL INFORMATION

This product contains the following toxic chemical(s) which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

TOXIC CHEMICAL	CAS #	APPROXIMATE % BY WEIGHT
1,2,4 - Trimethylbenzene	95-63-6	10-22%
Xylenes	1330-20-7	0-3%
Cumene	98-82-8	0-6%

SARA Title III Hazard Categories:	Immediate (Acute) Health, Delayed (Chronic) Health, Fire.
Common Names:	Petroleum Hydrocarbon, Aromatic Hydrocarbon
California Proposition 65:	This product contains Ethyl Benzene, Naphthalene and may contain trace amounts of Benzene and Toluene- which are known to the State of California to cause cancer, birth defects or other reproductive harm, and may be subject to the requirements of California Proposition 65.

TRANSPORTATION (U.S. D.O.T. land transportation in packages of 119 gallons or less)
Not regulated as D.O.T hazardous material.

Refer to 49 CFR for additional information.

MATERIAL SAFETY DATA SHEET

E61A705
10 00

DATE OF PREPARATION
Mar 6, 2012

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER
E61A705
PRODUCT NAME
KEM FLASH® ULTRA-BOND® Primer, Gray
MANUFACTURER'S NAME
THE SHERWIN-WILLIAMS COMPANY
101 Prospect Avenue N.W.
Cleveland, OH 44115

Telephone Numbers and Websites

Product Information	www.oem.sherwin-williams.com
Regulatory Information	(216) 566-2902
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
**for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)*	

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
0.1	100-41-4	**Ethylbenzene**		
		ACGIH TLV	20 PPM	7.1 mm
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
10	108-10-1	**Methyl Isobutyl Ketone**		
		ACGIH TLV	50 PPM	16 mm
		ACGIH TLV	75 PPM STEL	
		OSHA PEL	50 PPM	
		OSHA PEL	75 PPM STEL	
16	123-86-4	**n-Butyl Acetate**		
		ACGIH TLV	150 PPM	10 mm
		ACGIH TLV	200 PPM STEL	
		OSHA PEL	150 PPM	
		OSHA PEL	200 PPM STEL	
1	112926-00-8	**Amorphous Precipitated Silica**		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	6 mg/m3 as Dust	
33	471-34-1	**Calcium Carbonate**		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	15 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	
10	13463-67-7	**Titanium Dioxide**		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	10 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	
3	1314-13-2	**Zinc Oxide**		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	10 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	

SECTION 3 — HAZARDS IDENTIFICATION

ROUTES OF EXPOSURE
INHALATION of vapor or spray mist.
EYE or SKIN contact with the product, vapor or spray mist.

HMIS Codes

Health	2*
Flammability	3
Reactivity	0

EFFECTS OF OVEREXPOSURE

EYES: Irritation.
SKIN: Prolonged or repeated exposure may cause irritation.
INHALATION: Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.
Prolonged overexposure to hazardous ingredients in Section 2 may cause adverse chronic effects to the following organs or systems:
- the urinary system
- the hematopoietic (blood-forming) system

SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.
Redness and itching or burning sensation may indicate eye or excessive skin exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

CANCER INFORMATION

For complete discussion of toxicology data refer to Section 11.

SECTION 4 — FIRST AID MEASURES

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.
SKIN: Wash affected area thoroughly with soap and water.
Remove contaminated clothing and launder before re-use.
INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.
INGESTION: Do not induce vomiting. Get medical attention immediately.

SECTION 5 — FIRE FIGHTING MEASURES

FLASH POINT	LEL	UEL	FLAMMABILITY CLASSIFICATION
60 °F PMCC	1.4	7.6	RED LABEL – Flammable, Flash below 100 °F (38 °C)

EXTINGUISHING MEDIA

Carbon Dioxide, Dry Chemical, Foam

UNUSUAL FIRE AND EXPLOSION HAZARDS

Closed containers may explode when exposed to extreme heat.
Application to hot surfaces requires special precautions.
During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.
Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Remove all sources of ignition. Ventilate the area.
Remove with inert absorbent.

SECTION 7 — HANDLING AND STORAGE

STORAGE CATEGORY

DOL Storage Class IB

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are FLAMMABLE. Keep away from heat, sparks, and open flame.
During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.
Consult NFPA Code. Use approved Bonding and Grounding procedures.
Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.
Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.
Wash hands after using.
This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

PROTECTIVE GLOVES

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

EYE PROTECTION

Wear safety spectacles with unperforated sideshields.

OTHER PRECAUTIONS

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT	11.78 lb/gal	1411 g/l
SPECIFIC GRAVITY	1.42	
BOILING POINT	237 - 264 °F	113 - 128 °C
MELTING POINT	Not Available	
VOLATILE VOLUME	47%	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	N.A.	

VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)

3.32 lb/gal	398 g/l	Less Water and Federally Exempt Solvents
3.32 lb/gal	398 g/l	Emitted VOC

SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable

CONDITIONS TO AVOID

None known.

INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

SECTION 11 — TOXICOLOGICAL INFORMATION

CHRONIC HEALTH HAZARDS

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

IARC's Monograph No. 93 reports there is sufficient evidence of carcinogenicity in experimental rats exposed to titanium dioxide but inadequate evidence for carcinogenicity in humans and has assigned a Group 2B rating. In addition, the IARC summary concludes, "No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium is bound to other materials, such as paint."

TOXICOLOGY DATA

CAS No.	Ingredient Name			
100-41-4	Ethylbenzene			
		LC50 RAT	4HR	Not Available
		LD50 RAT		3500 mg/kg
108-10-1	Methyl Isobutyl Ketone			
		LC50 RAT	4HR	Not Available
		LD50 RAT		2080 mg/kg
123-86-4	n-Butyl Acetate			
		LC50 RAT	4HR	2000 ppm
		LD50 RAT		13100 mg/kg
112926-00-8	Amorphous Precipitated Silica			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
471-34-1	Calcium Carbonate			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
13463-67-7	Titanium Dioxide			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
1314-13-2	Zinc Oxide			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available

SECTION 12 — ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

No data available.

SECTION 13 — DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.
Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.
Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

US Ground (DOT)

5 Liters (1.3 Gallons) and Less may be Classed as CONSUMER COMMODITY, ORM-D
Larger Containers are Regulated as:
UN1263, PAINT, 3, PG II, (ERG#128)

DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

n-Butyl acetate 5000 lb RQ
Xylenes (isomers and mixture) 100 lb RQ

Bulk Containers may be Shipped as (check reportable quantities):

UN1263, PAINT, 3, PG II, (ERG#128)

Canada (TDG)

UN1263, PAINT, CLASS 3, PG II, (ERG#128)

IMO

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.
UN1263, PAINT, CLASS 3, PG II, MARINE POLLUTANT, (16 C c.c.), (ZINC OXIDE), EmS F-E, S-E, ADR (D/E)

IATA/ICAO

UN1263, PAINT, 3, PG II

SECTION 15 — REGULATORY INFORMATION

SARA 313 *(40 CFR 372.65C)* SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	0.1	
108-10-1	Methyl Isobutyl Ketone	10	
	Zinc Compound	6	3.5

CALIFORNIA PROPOSITION 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

SECTION 16 — OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

Sidergas

MATERIAL SAFETY DATA SHEET

This Safety Data Sheet complies with Regulation (EC) No 1907/2006, ISO 11014-1 and ANSI Z400.1

Rev. number:	MSDS 04_rev.1 - 01/2012	Date:	11th January 2012

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name:	**PROSTAR S6** PROSTAR by Praxair	Supplier:	**Sidergas SpA** - Viale Rimembranza 17 37015 S. Ambrogio Valp. (Verona) Italy Web: www.sidergas.com
Application:	**GAS METAL ARC WELDING**		
Standards:	**EN ISO 14341-A:11(*)**	**EN ISO 14341-A:08**	**AWS A5.18:05** / **CSA W48:06**
Classification:	**G 42 4 M21 3Si1/ G 42 4 C1 3Si1**	**G 42 4 M/3 C G3Si1**	**ER70S-6** / **B-G 49A 5 C G6**

2. HAZARDS IDENTIFICATION

Emergency Overview: Metal wire or rods in varying colors. This product is normally not considered hazardous as shipped. Gloves should be worn when handling to prevent cuts and abrasions.
This product contains nickel, which is classified as a skin sensitizer and a suspect carcinogen. In the form that nickel is present in this product it does not contribute to a hazard classification of the product. Skin contact is normally no hazard but should be avoided to prevent possible allergic reactions.
Persons with a pacemaker should not go near welding or cutting operations until they have consulted their doctor and obtained information from the manufacturer of the device.
When this product is used in a welding process, the most important hazards are welding fumes, heat, radiation and electric shock.

Fumes: Overexposure to welding fumes may result in symptoms like metal fume fever, dizziness, nausea, dryness or irritation of the nose, throat or eyes. Chronic overexposure to welding fumes may affect pulmonary function. Prolonged inhalation of nickel and chromium compounds above safe exposure limits can cause cancer. Overexposure to manganese and manganese compounds above safe exposure limits can cause irreversible damage to the central nervous system, including the brain, symptoms of which may include slurred speech, lethargy, tremor, muscular weakness, psychological disturbances and spastic gait.

Heat: Spatter and melting metal can cause burn injuries and start fires.

Radiation: Arc rays can severely damage eyes or skin.

Electricity: Electric shock can kill.

3.COMPOSITION/INFORMATION ON INGREDIENTS

This product is a continuous solid metal wire.

Wire Composition	Weight %	CAS#	EINECS#	Hazard class.1	IARC2	NTP3	OSHA List4
Chromium	<1	7440-47-3	231-157-5	No	-	-	-
Copper	<1	7440-50-8	231-159-6	No	-	-	-
Iron	>90	7439-89-6	231-096-4	No	-	-	-
Manganese	1-2	7439-96-5	231-105-1	No	-	-	-
Molybdenum	<1	7439-98-7	231-107-2	No	-	-	-
Nickel	<1	7440-02-0	231-111-4	Xn; R40-43	2B	S	-
Silicon	1-2	7440-21-3	231-130-8	No	-	-	-

(1) Hazard Classification according to European Council Directive 67/548/EEC, for R-phrases see Section 16.
(2) Evaluation according to the International Agency for Research on Cancer. 1-Carcinogenic to humans. 2A-Probably carcinogenic to humans. 2B-Possibly carcinogenic to humans.
(3) Classification according to the 11th Report on Carcinogens, published by the US National ToxicologyProgram. K- Known to be a Human Carcinogen. S- Suspect Carcinogen.
(4) Carcinogen listing according to OSHA, Occupational Safety & Health Administration (USA)

4. FIRST AID MEASURES

Inhalation:	If breathing has stopped, perform artificial respiration and obtain medical assistance immediately! If breathing is difficult, provide fresh air and call physician.
Eye contact:	For radiation burns due to arc flash, see physician. To remove dusts or fumes flush with water for at least fifteen minutes. If irritation persists, obtain medical assistance.
Skin contact:	For skin burns from arc radiation, promptly flush with cold water. Get medical attention for burns or irritations that persist. To remove dust or particles wash with mild soap and water.
Electric shock:	Disconnect and turn off the power. Use a nonconductive material to pull victim away from contact with live parts or wires. If not breathing, begin artificial respiration, preferably mouth-to-mouth. If no detectable pulse, begin Cardio Pulmonary Resuscitation (CPR). Immediately call a physician.
General:	Move to fresh air and call for medical aid.

5. FIRE FIGHTING MEASURES

No specific recommendations for welding consumables. Welding arcs and sparks can ignite combustible and flammable materials. Use the extinguishing media recommended for burning materials and fire situation. Wear self-contained breathing apparatus as fumes or vapors may be harmful.

6. ACCIDENTAL RELEASE MEASURES

Solid objects may be picked up and placed into a container. Liquids or pastes should be scooped up and placed into a container. Wear proper protective equipment while handling these materials. Do not discard as refuse.
Personal precautions: refer to section 8.
Environmental precautions: refer to section 13.

7. HANDLING AND STORAGE

Handling:	Handle with care to avoid stings and cuts. Wear gloves when handling welding consumables. Avoid exposure to dust. Do not ingest. Some individuals can develop an allergic reaction to certain materials. Retain all warning and identity labels.
Storage:	Keep separate from chemical substances like acids and strong bases,which could cause chemical reactions.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Avoid exposure to welding fumes, radiation, spatter, electric shock, heated materials and dust.

Engineering measures:	Ensure sufficient ventilation, local exhaust, or both, to keep welding fumes and gases from breathing zone and general area. Keep working place and protective clothing clean and dry. Train welders to avoid contact with live electrical parts and insulate conductive parts. Check condition of protective clothing and equipment on a regular basis.
Personal protective equipment:	Use respirator or air supplied respirator when welding or brazing in a confined space, or where local exhaust or ventilation is not sufficient to keep exposure values within safe limits. Use special care when welding painted or coated steels since hazardous substances from the coating may be emitted. Wear hand, head, eyes, ear and body protection like welders gloves, helmet or face shield with filter lens, safety boots, apron, arm and shoulder protection. Keep protective clothing clean and dry.

Use industrial hygiene monitoring equipment to ensure that exposure does not exceed applicable national exposure limits.
The following limits can be used as guidance. Unless noted, all values are for 8 hour time weighted averages (TWA).
For information about welding fume analysis refer to Section 10.

Substance	CAS#	ACGIH TLV 1 mg/m3	OSHA PEL 2 mg/m3

Chromium	7440-47-3	0,5	1
Copper	7440-50-8	1(d&m), 0,2(f)	1(d&m), 0,1(f)
Iron	7439-89-6	5**	10(f)
Manganese	7439-96-5	0,2	5(ceil)
Molybdenum	7439-98-7	3**, 10***	15*
Nickel	7440-02-0	1,5***	1
Silicon	7440-21-3	- 15*, 5	**

(1) Threshold Limit Values according to American Conference of Governmental Industrial Hygienists,2008
(2) Permissible Exposure Limits according to the Occupational Safety & Health Administration (USA).
(3) *Total dust, **Respirable fraction, ***Inhalable fraction.(f) fume, (d) dust, (m) mist, (ceil) ceiling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Solid, non-volatile with varying color

Melting point: >1000°C / >1800°F

10. STABILITY AND REACTIVITY

General: This product is only intended for normal welding purposes

Stability: This product is stable under normal conditions.

Reactivity: Contact with chemical substances like acids or strong bases could cause generation of gas.

When this product is used in a welding process, hazardous decomposition products would include those from the volatilization, reaction or oxidation of the materials listed in section 3 and those from the base metal and coating.
The amount of fumes generated from this product varies with welding parameters and dimensions, but is generally no more than 5 to 10 g/kg consumable. Fumes from this product contain compounds of the following chemical elements. The rest is not analyzed, according to available standards.

Fume analysis:	Fe	Mn	Si	Pb	Cu	Ni	Cr
weight % less than	60	10	5	0.2	1	0.1	0.1

Refer to applicable national exposure limits for fume compounds, including those exposure limits for fume compounds found in Section 8. A significant amount of the chromium in the fumes can be hexavalent chromium, which has a very low exposure limit in some countries. Manganese and nickel have low exposure limits, in some countries, that may be easily exceeded.
Reasonably expected gaseous products would include carbon oxides, nitrogen oxides and ozone. Air contaminants around the welding area can be affected by the welding process and influence the composition and quantity of fumes and gases produced.

11. TOXICOLOGICAL INFORMATION

Inhalation of welding fumes and gases can be dangerous to your health. Classification of welding fumes is difficult because of varying base materials, coatings, air contamination and processes. The International Agency for Research on Cancer has classified welding fumes as possibly carcinogenic to humans (Group 2B).

Acute toxicity: Overexposure to welding fumes may result in symptoms like metal fume fever, dizziness, nausea, dryness or irritation of the nose, throat or eyes.

Chronic toxicity: Overexposure to welding fumes may affect pulmonary function. Prolonged inhalation of nickel and chromium compounds above safe exposure limits can cause cancer. Overexposure to manganese and manganese compounds above safe exposure limits can cause irreversible damage to the central nervous system, including the brain, symptoms of which may include slurred speech, lethargy, tremor, muscular weakness, psychological disturbances and spastic gait.

12. ECOLOGICAL INFORMATION

Welding consumables and materials could degrade/weather into components originating from the consumables or from the materials used in the welding process. Avoid exposure to conditions that could lead to accumulation in soils or groundwater.

13. DISPOSAL CONSIDERATIONS

Discard any product, residue, disposable container or liner in an environmentally acceptable manner, in full compliance with federal and local regulations. Use recycling procedures if available.
USA RCRA: Unused products or product residue containing chromium is considered hazardous waste if discarded, RCRA ID Characteristic Toxic Hazardous Waste D007.
Residues from welding consumables and processes could degrade and accumulate in soils and groundwater.

14. TRANSPORT INFORMATION

No international regulations or restrictions are applicable.

15. REGULATORY INFORMATION

Read and understand the manufacturer's instructions, your employer's safety practices and the health and safety instructions on the label. Observe any federal and local regulations.
Take precautions when welding and protect yourself and others.
WARNING: Welding fumes and gases are hazardous to your health and may damage lungs and other organs. Use adequate ventilation.
ELECTRIC SHOCK can kill.
ARC RAYS and SPARKS can injure eyes and burn skin.
Wear correct hand, head, eye and body protection.

Canada: WHMIS classification: Class D; Division 2, Subdivision A Canadian Environmental Protection Act (CEPA): All constituents of this product are on the Domestic Substance List (DSL).

USA: Under the OSHA Hazard Communication Standard, this product is considered hazardous.
This product contains or produces a chemical known to the state of California to cause cancer and birth defects (or other reproductive harm). (California Health & Safety Code § 25249.5 et seq.) United States EPA Toxic Substance Control Act: All constituents of this product are on the TSCA inventory list or are excluded from listing.

CERCLA/SARA Title III
Reportable Quantities (RQs) and/or Threshold Planning Quantities (TPQs):

Ingredient name	RQ (lb)	TPQ (lb)
Product is a solid solution in the form of a solid article.	-	-

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center and to your Local Emergency Planning Committee.

Section 311 Hazard Class
As shipped: Immediate
In use: Immediate delayed

EPCRA/SARA Title III 313 Toxic Chemicals
The following metallic components are listed as SARA 313 Toxic Chemicals and potential subject to annual SARA 313 reporting. See Section 3 for weight percent.

Ingredient name	Disclosure threshold
Chromium	1.0% de minimis concentration
Manganese	1.0% de minimis concentration
Nickel	0.1% de minimis concentration
Copper	1.0% de minimis concentration

16. OTHER INFORMATION

This Safety Data Sheet has been revised due to modifications to several paragraphs and/or new format.

USA: Refer to American National Standard Z49.1 "Safety in Welding and Cutting", ANSI/AWS F1.5 "Methods for Sampling and Analyzing Gases from Welding and Allied Processes" ANSI/AWS F1.1 "Method for Sampling Airborne Particles Generated by Welding and Allied Processes" AWSF3.2M/F3.2 "Ventilation Guide for Weld Fume" American Welding Society, 550 North Le Jeune Road, Miami, Florida, 33135. Safety and Health Fact Sheets available from AWS at www.aws.org
OSHA Publication 2206 (29 C.F.R. 1910), U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954
American Conference of Governmental Hygienists (ACGIH), Threshold Limit Values and Biological Exposure Indices, 6500 Glenway Ave., Cincinnati, Ohio 45211, USA.
NFPA 51B "Standard for Fire Prevention During Welding, Cutting and Other Hot Work" published by the National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169

UK: WMA Publication 236 and 237, "Hazards from Welding fume" "The arc welder at work, some general aspects of health and safety".

Germany: Unfallverhütungsvorschrift BGV D1, "Schweißen, Schneiden und verwandte Verfahren".

Canada: CSA Standard CAN/CSA-W117.2-01 "Safety in Welding, Cutting and Allied Processes"

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

R-phrases: R40 - Limited evidence of a carcinogenic effect.

R43 - May cause sensitization by skin contact.

SIDERGAS requests the users of this product to study this Material Safety Data Sheet (MSDS) and become aware of product hazards and safety information. To promote safe use of this product a user should:

- notify its employees, agents and contractors of the information on this MSDS and any product hazards/safety information.
- furnish this same information to each of its customers for the product.
- request such customers to notify employees and customers for the same product hazards and safety information.

The information herein is given in good faith and based on technical data that SIDERGAS believes to be reliable. Since the conditions of use is outside our control, we assume no liability in connection with any use of this information and no warranty, expressed or implied is given.
For additional information contact **SIDERGAS** at Phone No. **+ 39 045 6862044** or e-mail at: **info@sidergas.com**

UNITED ABRASIVES, INC.

MATERIAL SAFETY DATA SHEET
Coated Abrasives
MSDS #4

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identity / Trade Name: Coated Abrasives - Resin over Resin, Cotton Cloth, Fiber, Polyester Backing or Paper (Dry Wall Sheets, Cloth or Paper Sheets, Flap Wheels, Flap Discs, Fiber Discs, PSA Cloth Discs, Paper Stearate Discs, Shop Rolls, Abrasive Belts, Sanding Products)

Floor

Product Use: Abrasive materials used for sanding metals, concrete, masonry and building materials.

Manufacturer:

Mailing Address
United Abrasives, Inc.
P.O. Box 75
Willimantic, CT 06226

Physical Address
United Abrasives, Inc.
185 Boston Post Road
North Windham, CT 06256

Internet: www.unitedabrasives.com

Information Phone: (860) 456-7131 **Emergency Phone:** (860) 456-7131

MSDS Date of Preparation: December 1, 2009

2. HAZARDS IDENTIFICATION

This product is cloth or paper coated with abrasive material in sheets, discs or on wheels

EMERGENCY OVERVIEW

Dust may cause eye and respiratory irritation. Dust particles may cause abrasive injury to the eyes.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component	CAS #	%
Aluminum Oxide	1344-28-1	0-50
and/or Silicon Carbide	409-21-2	0-50
and/or Garnet	12178-41-5	0-30
and/or Zirconium Oxide	1314-23-4	0-30
Cured Phenolic or Urea Formaldehyde Resin	N/A	5-40
and/or Calcium Carbonate	1317-65-3	0-25
and/or Calcium Stearate	1592-23-0	5-10
And/or Calcium Sulfate	7778-18-9	0-5
and/or Zinc Stearate	557-05-1	0-10
and/or Cryolite (as fluorides)	15096-52-3	0-15
and/or Potassium Fluoroborate	14075-53-7	5-0
and/or Flame Retardant	Proprietary	0-8
And/or Kaolin	1332-58-7	0-5
And/or Crystalline Silica, Quartz	14808-60-7	0.1-1
Cotton or Polyester Cloth	N/A	15-55
and/or paper backing	N/A	20-65
and/or fibre	N/A	35-70

4. FIRST AID MEASURES

Ingestion: If sanding dust is swallowed, seek medical attention.
Inhalation: If overexposed to sanding dust, remove victim to fresh air and get medical attention.
Eye Contact: Flush eyes thoroughly with water, holding open eyelids. Get medical attention if irritation persists. Obtain immediate medical attention for foreign body in the eye.
Skin Contact: Wash dust from skin with soap and water. Launder contaminated clothing before reuse.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Use any media that is appropriate for the surrounding fire.
Special Firefighting Procedures: None needed.
Unusual Fire and Explosion Hazards: This product is not combustible, however, consideration must be given to the potential fire/explosion hazards from the base material being processed. Many materials create flammable/explosive dusts or turnings when sanded, machined or ground.
Hazardous Combustion Products: None known.

6. ACCIDENTAL RELEASE MEASURES

Pick up, sweep up or vacuum and place in a container for disposal. Minimize generation of dust. Notify authorities as required by local, state and federal regulations.

7. HANDLING AND STORAGE

Recommended Work Practices: Use only with adequate ventilation. Avoid breathing dust. Wash thoroughly after handling and use, especially before eating, drinking or smoking. Consider potential exposure to components of the base materials or coatings being sanded or ground. Refer to OSHA's substance specific standards for additional work practice requirements where applicable.
Storage: Store in a dry location.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

Hazardous Component	OSHA PEL	ACGIH TLV
Aluminum Oxide	15 mg/m^3 (total dust)	1 mg/m^3 (respirable) (as Al metal)
Silicon Carbide	15 mg/m^3 (total dust)	10 mg/m^3 (inhalable fraction)
Garnet	15 mg/m^3 (total dust)	None Established
Zirconium Oxide	5 mg/m^3	5 mg/m^3
Cured Phenolic or Urea Formaldehyde Resin	None Established	None Established
Calcium Carbonate	15 mg/m^3 (total dust)	None Established
Calcium Stearate	None Established	10 mg/m^3
Calcium Sulfate	15 mg/m^3 (total dust)	10 mg/m^3 (inhalable)
Zinc Stearate	15 mg/m^3 (total dust)	10 mg/m^3
Cryolite (as fluorides)	2.5 mg/m^3	2.5 mg/m^3
Potassium Fluoroborate (as fluorides)	2.5 mg/m^3	2.5 mg/m^3
Flame Retardant	None Established	None Established
Kaolin	15 mg/m^3 (total dust)	2 mg/m^3 (respirable)
Cotton or Polyester Cloth	None Established	None Established
Crystalline Silica, Quartz	10 mg/m^3 / % Silica + 2	0.025 mg/m3
Paper Backing	15 mg/m^3 (Total Dust)	None Established
Fibre	15 mg/m^3 (Total Dust)	None Established

Note: Consider also components of base materials and coatings being ground.

Ventilation: Use local exhaust or general ventilation as required to minimize exposure to dust and maintain the concentration of contaminants below the occupational exposure limits.
Respiratory Protection: Use NIOSH approved respirator if exposure limits are exceeded or where dust exposures are excessive. Consider the potential for exposure to components of the coatings or base material being ground in selecting proper respiratory protection. Refer to OSHA's specific standards for lead, cadmium, etc. where appropriate. Selection of respiratory protection depends on the contaminant type, form and concentration. Select and use respirators in accordance with OSHA 1910.134 and good industrial hygiene practice.
Gloves: Cloth or leather gloves recommended.
Eye Protection: Safety goggles or face shield over safety glasses with side shields.
Other: Protective clothing as needed to prevent contamination of personal clothing. Hearing protection may be required.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: Not Applicable
Solubility in Water: Insoluble
Specific Gravity: Not Applicable
Melting Point: Not Applicable
Flammable Limits: LEL: Not Applicable **UEL**: Not Applicable

Vapor Pressure: (mm Hg) Not Applicable
Vapor Density: (Air = 1) Not Applicable
Evaporation Rate: Not Applicable
Flash Point: Non-Combustible

Appearance and Odor: Cloth or paper coated with abrasive material in sheets, discs or on wheels.

10. STABILITY AND REACTIVITY

Stability: Stable
Incompatibility: None known.
Hazardous Decomposition Products: Dust from sanding could contain ingredients listed in Section 3 and other, potentially more hazardous components of the base material being sanded or coatings applied to the base material.
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

HEALTH HAZARDS:

Ingestion: None expected under normal use conditions. Swallowing large pieces may cause obstruction of the gastrointestinal tract.
Inhalation: Dust may cause respiratory irritation.
Eye: Dust may cause eye irritation. Dust particles may cause abrasive injury to the eyes.
Skin: None expected under normal use conditions. Rubbing product across the skin may cause mechanical irritation or abrasions.
Sensitization: This material is not known to cause sensitization.
Chronic: Long-term overexposure to respirable dust may cause lung damage (fibrosis) with symptoms of coughing, shortness of breath and diminished breathing capacity. Chronic effects may be aggravated by smoking. Excessive inhalation of respirable crystalline silica dust may cause may cause a progressive, disabling and sometimes fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness and reduced pulmonary function. Prolonged overexposure to fluorides may cause a bone condition, fluorosis. Prolonged exposure to elevated noise levels during operations may affect hearing. A greater hazard, in most cases, is the exposure to the dust/fumes from the material or paint/coatings being sanded. Most of the dust generated during sanding is from the base material being sanded and the potential hazard from this exposure must be evaluated.
Carcinogenicity: Crystalline silica quartz is listed as "Carcinogenic to Humans" (Group 1) by IARC and "Known to be a Human Carcinogen" by NTP. None of the other components are listed as a carcinogen or potential carcinogen by OSHA, NTP or IARC.
Medical Conditions Aggravated by Exposure: Employees with pre-existing respiratory disease may be at risk from exposure.

Acute Toxicity Values:
This product and its components are not acutely toxic. The only acute toxicity data available for the components are listed below.
Cryolite: LD50 Oral rat >5g/kg
Zinc Stearate: LD50 Oral rat >10 gm/kg
Calcium Stearate: LD50 Oral rat >10 gm/kg
Kaolin: LD50 Oral rat >5,000 mg/kg; LD50 dermal rat >5,000 mg/kg

12. ECOLOGICAL INFORMATION

No ecological data is available for this product. No hazards to the environment are expected from this product. However, consideration must be given to potential environment effects of the base material being processed.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable local, state/provincial and federal regulations. Local regulations may be more stringent than regional and national requirements. It is the responsibility of the waste generator to determine the toxicity and physical characteristics of the material to determine the proper waste identification and disposal in compliance with applicable regulations.

14. TRANSPORT INFORMATION

DOT Hazardous Materials Description:
Proper Shipping Name: Not Regulated
UN Number: None
Hazard Class/Packing Group: None
Labels Required: None

15. REGULATORY INFORMATION

SARA Section 311/312 Hazard Categories: Not Applicable

SARA Section 313: Some products contain the following toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372 (Toxic Chemical Release Reporting):

Zinc Stearate (as zinc compounds)	557-05-1	0-10%

(Only in 9x11 Sheets - No Load Stearate, Fileboard Sheets - No Load, PSA Paper Discs - Stearate and Premium and Hook and Loop Paper Discs - Premium)

California Proposition 65: WARNING You create dust when you cut, sand, drill or grind materials such as wood, paint, cement, masonry or metal. This dust often contains chemicals known to cause cancer, birth defects or other reproductive harm.

Canadian WHMIS Classification: Not a controlled product. This product meets the definition of a "manufactured article" under the WHMIS regulations.
This product has been classified under the CPR and this MSDS discloses information elements required by the CPR.

16. OTHER INFORMATION

NFPA Hazard Rating: **Health:** 1
Fire: 0
Reactivity: 0

Date Previous Revision: 12/13/06
Date This Revision: 12/1/09
Revision Summary: Section 3 components; Section 5 Removed Flammable Limits; Section 8 Exposure Limits; Section 11 Chronic Health Hazards; Section 16 HMIS Rating
Prepared By: Denese A. Deeds, CIH IH&SC Inc., Woodbridge, CT 06525

The preceding information is believed to be correct and current as of the date of preparation of this Material Safety Data Sheet. Since the use of this information and the conditions of use of this product are not within the control of United Abrasives, Inc., it is the user's obligation to assure safe use of this product.

UNITED ABRASIVES, INC.

MATERIAL SAFETY DATA SHEET
Resinoid Bonded Abrasives
MSDS #1/2

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identity / Trade Name: Grinding and Cutting Wheels, Resinoid (Type 1, Type 27, Type 28, Type 29), Cup Wheels (Type 11) Cones and Plugs (Type 16, Type 17 and Type 18), Mounted Points, UA-MTX, UA-GFX, A36F, A54F.

Product Use: Abrasive materials used for cutting and grinding metals, concrete, masonry and building materials.

Manufacturer:

Mailing Address
United Abrasives, Inc.
P.O. Box 75
Willimantic, CT 06226

Physical Address
United Abrasives, Inc.
185 Boston Post Road
North Windham, CT 06256

Internet: www.unitedabrasives.com

Information Phone: (860) 456-7131 **Emergency Phone:** (860) 456-7131

MSDS Date of Preparation: December 1, 2009

2. HAZARDS IDENTIFICATION

This product is a black, brown or reddish colored solid wheel with no odor.

EMERGENCY OVERVIEW

Dust may cause eye and respiratory irritation. Dust particles may cause abrasive injury to the eyes.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component	CAS #	%
Aluminum Oxide	1344-28-1	0-95
and/or Silicon Carbide	409-21-2	0-95
and/or Zirconium Oxide	1314-23-4	0-80
and/or Cubitron	N/A	0-20
and/or Titanium Dioxide	13463-67-7	0-5
Cured Phenolic Resin	N/A	1-30
and/or Woven Fiberglass	N/A	0-20
and/or Calcium Carbonate	1317-65-3	0-5
and/or Calcium Compounds	N/A	0-15
and/or Barium Sulfate	7727-43-7	0-15
and/or Sulfur	7704-34-9	0-5
and/or Zinc Sulfide	1314-98-3	0-15
and/or Magnesium Oxide	1309-48-4	0-5
and/or Iron Oxide	1309-37-1	0-5
and/or Graphite	7782-42-5	0-5
and/or Iron Pyrite	12068-85-8	0-20
and/or Floride Compounds	N/A	1-15
and/or Potassium Fluoroborate	14075-53-7	0-5
Chromic Acid	1308-38-9	0-2

4. FIRST AID MEASURES

Ingestion: If grinding dust is swallowed, seek medical attention.
Inhalation: If overexposed to grinding dust, remove victim to fresh air and get medical attention.

Eye Contact: Flush eyes thoroughly with water, holding open eyelids. Get medical attention if irritation persists. Obtain immediate medical attention for foreign body in the eye.
Skin Contact: Wash dust from skin with soap and water. Launder contaminated clothing before reuse.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Use any media that is appropriate for the surrounding fire.
Special Firefighting Procedures: None needed.
Unusual Fire and Explosion Hazards: This product is not combustible, however, consideration must be given to the potential fire/explosion hazards from the base material being processed. Many materials create flammable/explosive dusts or turnings when machined or ground.
Hazardous Combustion Products: None known.

6. ACCIDENTAL RELEASE MEASURES

Pick up, sweep up or vacuum and place in a container for disposal. Minimize generation of dust. Notify authorities as required by local, state and federal regulations.

7. HANDLING AND STORAGE

Recommended Work Practices: Use only with adequate ventilation. Avoid breathing dust. Wash thoroughly after handling and use, especially before eating, drinking or smoking. Refer to ANSI B7.1, Safety Requirements for the Use, Care and Protection of Abrasive Wheels for additional information. Consider potential exposure to components of the base materials or coatings being ground. Refer to OSHA's substance specific standards for additional work practice requirements where applicable.
Storage: Store in accordance with ANSI B7.1. Protect abrasive wheels from damage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

Hazardous Component	OSHA PEL	ACGIH TLV
Aluminum Oxide	15 mg/m^3 (total dust)	1 mg/m^3 (respirable) (as Al metal)
Silicon Carbide	15 mg/m^3 (total dust)	10 mg/m^3 (inhalable)
Zirconium Oxide (as zircomium compounds)	5 mg/m^3	5 mg/m^3 10 mg/m3 STEL
Cubitron	None Established	None Established
Titanium Dioxide	15 mg/m^3 (total dust)	10 mg/m^3
Cured Phenolic Resin	None Established	None Established
Woven Fiberglass	15 mg/m^3 (total dust)	1 f/cc
Calcium Carbonate	15 mg/m^3 (total dust)	None Established
Calcium Oxide	5 mg/m^3	2 mg/m^3
Barium Sulfate	15 mg/m^3 (total dust)	10 mg/m^3
Sulfur	None Established	None Established
Zinc Sulfide	None Established	None Established
Magnesium Oxide	15 mg/m^3 (total dust)	10 mg/m^3 (inhalable)
Iron Oxide	10 mg/m^3 (fume)	5 mg/m^3 (respirable)
Graphite	15 mg/m^3 (total dust)	2 mg/m^3 (respirable)
Iron Pyrite	None Established	None Established
Cryolite (as fluorides)	2.5 mg/m^3	2.5 mg/m^3
Potassium Fluoroborate (as fluorides)	2.5 mg/m^3	2.5 mg/m^3

Note: Consider also components of base materials and coatings being ground.

Ventilation: Use local exhaust or general ventilation as required to minimize exposure to dust and maintain the concentration of contaminants below the TLVs.
Respiratory Protection: Use NIOSH approved respirator if exposure limits are exceeded or where dust exposures are excessive. Consider the potential for exposure to components of the coatings or base material being ground in selecting proper respiratory protection. Refer to OSHA's specific standards for lead, cadmium, etc. where appropriate. Selection of respiratory protection depends on the contaminant type, form and concentration. Select and use respirators in accordance with OSHA 1910.134 and good industrial hygiene practice.
Gloves: Cloth or leather gloves recommended.
Eye Protection: Safety goggles or face shield over safety glasses with side shields.
Other: Protective clothing as needed to prevent contamination of personal clothing. Hearing protection may be required.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: Not Applicable
Solubility in Water: Insoluble
Specific Gravity: Not Applicable
Melting Point: Not Applicable
Vapor Pressure: (mm Hg) Not Applicable
Vapor Density: (Air = 1) Not Applicable
Evaporation Rate: Not Applicable
Flash Point: Non-Combustible
Flammable Limits: LEL: Not Applicable **UEL:** Not Applicable
Appearance and Odor: Black, brown or reddish colored solid wheel with no odor.

10. STABILITY AND REACTIVITY

Stability: Stable
Incompatibility: None known.
Hazardous Decomposition Products: Dust from grinding could contain ingredients listed in Section 3 and other, potentially more hazardous components of the base material being ground or coatings applied to the base material.
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

HEALTH HAZARDS:

Ingestion: None expected under normal use conditions. Swallowing large pieces may cause obstruction of the gastrointestinal tract.
Inhalation: Dust may cause respiratory irritation.
Eye: Dust may cause eye irritation. Dust particles may cause abrasive injury to the eyes.
Skin: None expected under normal use conditions. Rubbing product across the skin may cause mechanical irritation or abrasions.
Sensitization: This material is not known to cause sensitization.
Chronic: Long-term overexposure to respirable dust may cause lung damage (fibrosis) with symptoms of coughing, shortness of breath and diminished breathing capacity. Chronic effects may be aggravated by smoking. Prolonged overexposure to fluorides may cause a bone condition, fluorosis. Prolonged exposure to elevated noise levels during operations may affect hearing. A greater hazard, in most cases, is the exposure to the dust/fumes from the material or paint/coatings being ground. Most of the dust generated during grinding is from the base material being ground and the potential hazard from this exposure must be evaluated.
Carcinogenicity: Titanium Dioxide is listed by IARC as a group 2B Carcinogen (suspected human carcinogen). None of the other components is listed as a carcinogen or potential carcinogen by OSHA, NTP or IARC.
Medical Conditions Aggravated by Exposure: Employees with pre-existing respiratory disease may be at risk from exposure.
Acute Toxicity Values:
This product and its components are not acutely toxic. The only acute toxicity data available for the components are listed below.
Zinc Sulfide: LD50 oral rat >15,000 mg/kg
LD50 dermal rat > 2 g/kg
Cryolite: LD50 Oral rat >5g/kg

12. ECOLOGICAL INFORMATION

No ecological data is available for this product. No hazards to the environment are expected from this product. However, consideration must be given to potential environment effects of the base material being processed.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable local, state/provincial and federal regulations. Local regulations may be more stringent than regional and national requirements. It is the responsibility of the waste generator to determine the toxicity and physical characteristics of the material to determine the proper waste identification and disposal in compliance with applicable regulations.

14. TRANSPORT INFORMATION

DOT Hazardous Materials Description:
Proper Shipping Name: Not Regulated
UN Number: None
Hazard Class/Packing Group: None
Labels Required: None

15. REGULATORY INFORMATION

SARA Section 311/312 Hazard Categories: Not Applicable

SARA Section 313: Some products contain the following toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372 (Toxic Chemical Release Reporting):

Zinc Sulfide* (as zinc compounds)	1314-98-3	0-5%

*Only in Type 29 Challenger Flexible Grinding/Blending Wheels

California Proposition 65: WARNING You create dust when you cut, sand, drill or grind materials such as wood, paint, cement, masonry or metal. This dust often contains chemicals known to cause cancer, birth defects or other reproductive harm.

Canadian WHMIS Classification: Not a controlled product. This product meets the definition of a "manufactured article" under the WHMIS regulations.
This product has been classified under the CPR and this MSDS discloses information elements required by the CPR.

16. OTHER INFORMATION

NFPA Hazard Rating: **Health:** 1
Fire: 0
Reactivity: 0

Date Previous Revision: 12/13/06
Date This Revision: 12/1/09
Revision Summary: Section 5: Moved Flammable Limits to Section 9; Section 8: Updated Exposure Limits; Comprehensive Review
Prepared By: Denese A. Deeds, CIH IH&SC Inc., Woodbridge, CT 06525

The preceding information is believed to be correct and current as of the date of preparation of this Material Safety Data Sheet. Since the use of this information and the conditions of use of this product are not within the control of United Abrasives, Inc., it is the user's obligation to assure safe use of this product.

APPENDIX D

MANUFACTURER'S DATA SHEETS

Envirosystems SM

2555 N. Coyote Dr. Suite. 114
Tucson, AZ 85745
(520) 573-3064
(520) 573-3068 Fax
e-mail envirosystems@att.net

Filter Cartridge Specifications
Item Number 60-01-05

Dimensions:	**Height:**	26"
	Outside Diameter:	12.75"
	Inside Diameter:	8.375"
Top End Cap:	**Material:**	Electro Galvanized (22 ga)
	Style:	Open
Bottom End cap:	**Material:**	Electro Galvanized (22 ga)
	Style:	Closed
	Bolt Hole:	None
Gasket:	1/2" x 1/2" x 10.25" ID isoprene sponge applied on top cap	
Inner Retainer:	Electro galvanized expanded metal 3/8" x 5/8" 72% open area	
Outer Retainer:	Electro galvanized expanded metal 3/8" x 5/8" 72% open area	
Filter Media Area:	201 ft²	
Pleat Count:	287	
Media Type:	Cellulose/Polyester Blend	
Permeability:	14 cfm/ft² @ 0.5" w.g. 112 L/sec/m² @ ΔP 20 mm w.g.	
Maximum Temperature:	180° F	

PARTICLE EFFICIENCY BY WEIGHT. TEST DUST: AC FINE

PARTICLE SIZE:	0.5 micron----------	99.8%
	1.0 micron----------	99.9%
	2.0 micron----------	100 %

Envirosystems SM

2555 N. Coyote Dr. Suite. 114
Tucson, AZ 85745
(520) 573-3064
(520) 573-3068 Fax
e-mail envirosystems@att.net

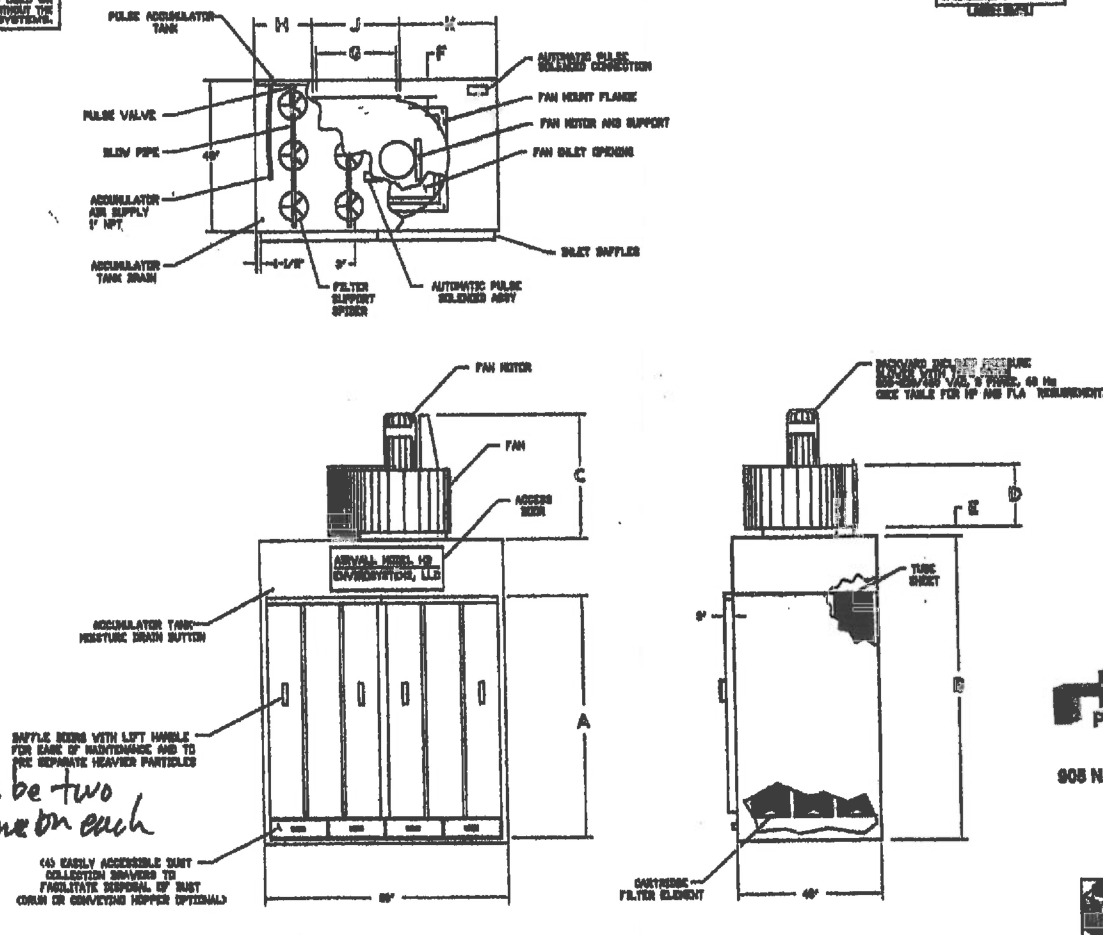
Filter Cartridge Specifications
Item Number 60-01-06

Dimensions:	**Height:**	**26"**
	Outside Diameter:	**12.75"**
	Inside Diameter:	**8.375"**
Top End Cap:	**Material:**	**Electro Galvanized (22 ga)**
	Style:	**Open**
Bottom End cap:	**Material:**	**Electro Galvanized (22 ga)**
	Style:	**Open**
Gasket:	**1/2" x 1/2" x 11.75" ID isoprene sponge applied on top cap**	
Inner Retainer:	**Electro galvanized expanded metal 3/8" x 5/8" (9.53 mm x 15.88 mm) 72% open area**	
Outer Retainer:	**Electro galvanized expanded metal 3/8" x 5/8" (9.53 mm x 15.88 mm) 72% open area**	
Filter Media Area:	**202 ft²**	
Pleat Count:	**288 +/- 2**	
Media Type:	**Cellulose/Polyester Blend**	
Permeability:	**14 cfm/ft² @ 0.5" w.g.** **112 L/sec/m² @ ΔP 20**	
Maximum Temperature:	**180° F (82.22° C)**	

PARTICLE EFFICIENCY BY WEIGHT, TEST DUST: AC FINE

PARTICLE SIZE:	**0.5 micron----------**	**99.8%**
	1.0 micron----------	**99.9%**
	2.0 micron----------	**100 %**

THIS DOCUMENT AND THE DATA DISCLOSED HEREIN AND HEREWITH IS NOT TO BE REPRODUCED, USED OR DISCLOSED IN WHOLE OR IN PART TO ANYONE WITHOUT THE WRITTEN AUTHORIZATION OF ENVIROSYSTEMS.



NOTES:

1. ALL SYSTEMS INCORPORATE REVERSE PULSE-JET CLEANING UNDER AUTOMATED SEQUENCE CONTROL, DIAPHRAGM VALVES, AIR PRESSURE ACCUMULATOR TANK & PULSE-JET BLOW PIPE, FACTORY ASSEMBLED. FAN SHIPPED SEPARATELY.
2. CONSTRUCTION 12 GAUGE GALVANIZED STEEL ON STRUCTURAL SQUARE STEEL TUBE FRAME.
3. LARGE AREA AIR INLET REDUCES AIR VELOCITIES THROUGH BAFFLES, RESULTS IN LOWER OPERATING PRESSURE DROP AND LESS HP REQUIREMENT.
4. FIELD CONNECTION POINTS
   ELECTRICAL: 3 PH, LINE TO STARTER AND STARTER TO MOTOR.
   1 PH, 120V, TO PULSE CONTROL SYSTEM
   AIR: 1" NPT FITTING (LOCATED IN BOTTOM LEFT TUBE SHEET).
5. COMPRESSED AIR REQUIRED 90-100 PSIG OF CLEAN, DRY AIR. SYSTEM USES APPROX. 3 CFM
6. POWER 208/230/460 VAC, 3 PHASE, 60 HZ. SEE CHART BELOW FOR FLA REQUIREMENT 120 VAC, 1 PH, 60 HZ, (2.0 A)
7. OPTIONS (SELECT AS REQUIRED)
   A. ☐ SAFETY MONITORING FILTER PACKAGE (DOES NOT INCLUDE DUCTING FROM FAN (USUALLY FACTORY) (SHIPPED LOOSE)
   ☐ SAFETY FILTER, ASHRAE 95%
   ☐ SAFETY FILTER, HEPA
   B. ☐ 380/575 VAC ELECTRICAL SYSTEMS
   C. ☐ 50 Hz ELECTRICAL SYSTEMS
   D. ☐ FAN SILENCERS (SHIPPED LOOSE)

Professional Automotive Equipment, Inc.
801-292-2224
800-860-2029
905 North Main St #C8 • North Salt Lake UT 84054
www.mikerudertgroup.com

→ There will be two of these - one on each side of blast booth.

MODEL NO.	TOTAL CFM	CARTRIDGE FILTER ELEMENT QTY REQ'D	TOTAL FLTR AREA (SQ FT)	AIR TO FLTR RATIO	BLOWER	FAN INLET OPENING	A	B	C	D	E	F	G	H	J	K	AIRWALL PART NO.	MOTOR FLA @ 208/230V	460V
AW100HD	10,000	80	4,785	2.12 : 1	10 HP	30X31	78"	96"	36"	60"	8"		27-3/8"		31-3/8"		1807	32.0/29.0	14.8
AW120HD	12,000	80	4,785	2.54 : 1	15 HP	34X34	78"	96"	41"	10-1/4"	8"		27-3/8"		31-3/8"		1809	48.3/43.8	22.0
[illegible]	[illegible]	30	4,875	[illegible]	[illegible]	[illegible]	78"	64"	48"	[illegible]	2"		30-1/16"		34-3/8"		1800	48.3/34.0	21.0

ENVIROSYSTEMS LLC
REVISION HISTORY — CHANGE DESCRIPTION

APPROVALS	DATE
KEA	2/10/01
SD	2/20/01
KEA	1/18/01
KEA	1/18/01
DO NOT SCALE DRAWING	

TITLE: AIRWALL MODEL HD GENERAL DATA

SIZE: N/A · SCALE: N/S · DWG NO.: AV HD DATA · REV: A

November 1, 2009

STATEMENT OF COMPLIANCE

EPA TEST METHOD REQUIREMENT
as found in
40CFR63, Subpart HHHHHH (6H)

Recent legislation by the EPA applying to surface coating applications require that overspray collection filters used in paint spray booths meet a 98% capture rate under certain test parameters as outlined below in the actual EPA finding:

> *(i) All spray booths, preparation stations, and mobile enclosures must be fitted with a type of filter technology that is demonstrated to achieve at least 98-percent capture of paint overspray. The procedure used to demonstrate filter efficiency must be consistent with the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Method 52.1, ''Gravimetric and Dust-Spot Procedures for Testing Air-Cleaning Devices Used in General Ventilation for Removing Particulate Matter, June 4, 1992'' (incorporated by reference, see § 63.14 of subpart A of this part). The test coating for measuring filter efficiency shall be a high solids bake enamel delivered at a rate of at least 135 grams per minute from a conventional (non-HVLP) air-atomized spray gun operating at 40 pounds per square inch (psi) air pressure; the air flow rate across the filter shall be 150 feet per minute. Owners and operators may use published filter efficiency data provided by filter vendors to demonstrate compliance with this requirement and are not required to perform this measurement.*

The following products distributed by Filter Systems meet this requirement:

TYPE PA14- Fiberglass Exhaust Media 15 gram weight
TYPE PA22- Fiberglass Exhaust Media 22 gram weight
TYPE SG15- Fiberglass Exhaust Media with synthetic backing 15 gram weight
TYPE SG32- Fiberglass Exhaust Media with synthetic backing 32 gram weight

***Test sheets are available upon request

Filter Systems

Automotive and Industrial Spray Booth Filtration Products

PRODUCT CATALOG

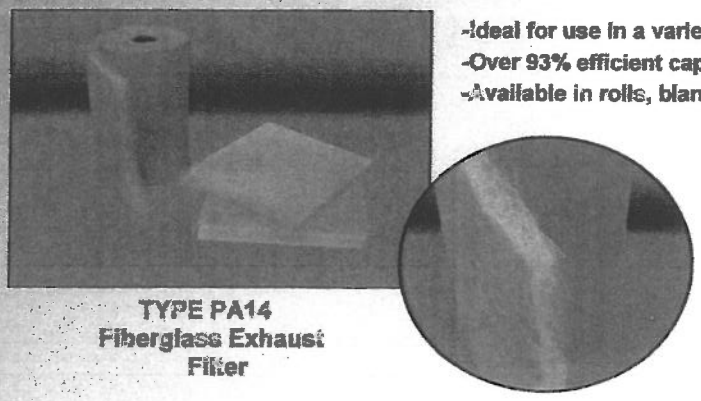
U.S. West Coast Importer/Distributer for Spartex Air Filtration Media

301 Lambert Street
Oxnard, CA 93036

TEL: 800-540-4 AIR
FAX: 805-981-8675

E-MAIL: sales@filtersystemsusa.com
WEB: www.filtersystemsusa.com

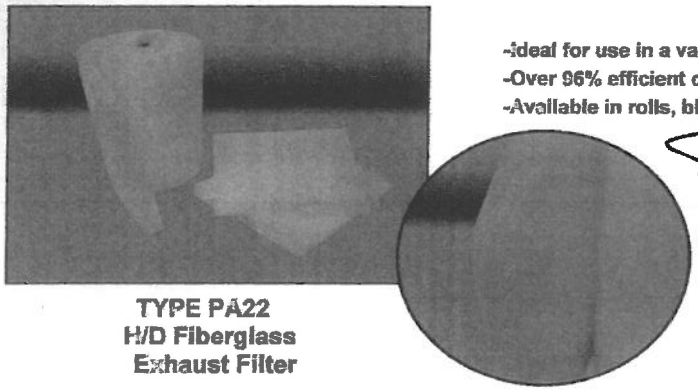
Spray Booth Exhaust Filtration Products



TYPE PA14
Fiberglass Exhaust
Filter

-Ideal for use in a variety of crossdraft applications
-Over 93% efficient capturing paint overspray
-Available in rolls, blankets or cut pads

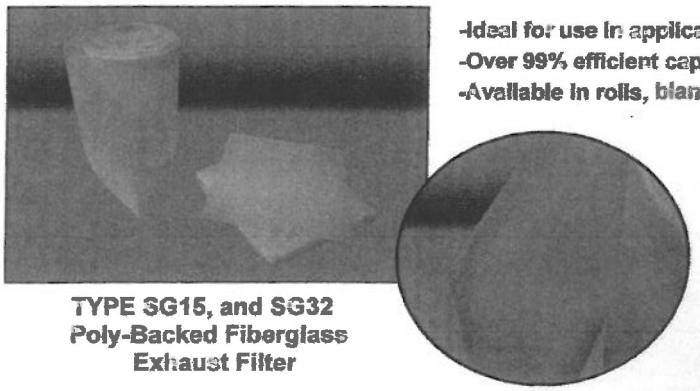
P/N PA14-2020	20"x20"x2.5"	100/cs
P/N PA14-2025	20"x25"x2.5"	100/cs
P/N PA14-2424	24"x24"x2.5"	100/cs
P/N PA14-203	20"x300'x2.5"	1/cs
P/N PA14-253	25"x300'x2.5"	1/cs
P/N PA14-303	30"x300'x2.5"	1/cs
P/N PA14-363	36"x300'x2.5"	1/cs
P/N PA14-413	41"x300'x2.5"	1/cs
P/N PA14-483	48"x300'x2.5"	1/cs



TYPE PA22
H/D Fiberglass
Exhaust Filter

-Ideal for use in a variety of downdraft applications
-Over 96% efficient capturing paint overspray
-Available in rolls, blankets or cut pads

P/N PA22-2020	20"x20"x2.5"	100/cs
P/N PA22-2025	20"x25"x2.5"	100/cs
P/N PA22-2424	24"x24"x2.5"	100/cs
P/N PA22-203	20"x300'x2.5"	1/cs
P/N PA22-253	25"x300'x2.5"	1/cs
P/N PA22-303	30"x300'x2.5"	1/cs
P/N PA22-363	36"x300'x2.5"	1/cs
P/N PA22-413	41"x300'x2.5"	1/cs
P/N PA22-483	48"x300'x2.5"	1/cs



TYPE SG15, and SG32
Poly-Backed Fiberglass
Exhaust Filter

-Ideal for use in applications requiring total overspray removal
-Over 99% efficient capturing paint overspray
-Available in rolls, blankets or cut pads

P/N SG15-2020	20"x20"x2.5"	100/cs
P/N SG15-2025	20"x25"x2.5"	100/cs
P/N SG15-303	30"x300'x2.5"	1/cs
P/N SG15-363	36"x300'x2.5"	1/cs
P/N SG32-30165	30"x165'x4"	1/cs
P/N SG32-60165	60"x165'x4"	1/cs

Filter Systems
301 Lambert St. Unit B
Oxnard, CA 93036

TEL: 800-540-4AIR
FAX: (805) 981-8675
www.filtersystemsusa.com

PAINT ARRESTANCE FILTER TEST REPORT
Spray Removal Efficiency & Paint Holding Capacity

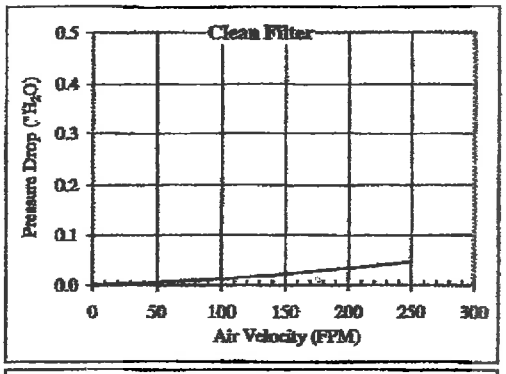
Tested for:
Filter Mfr.:
Filter Name: 22 Grams Paint Arrester
Report#/Test# R 661 T 761
Report Date: March 16, 2005

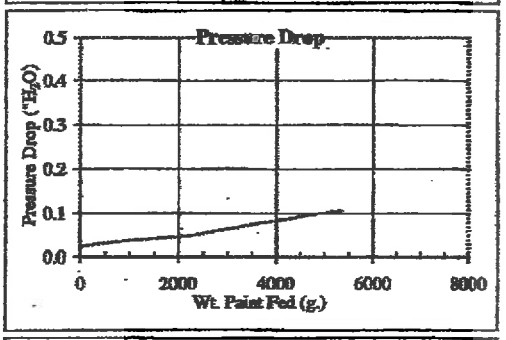
Test Information

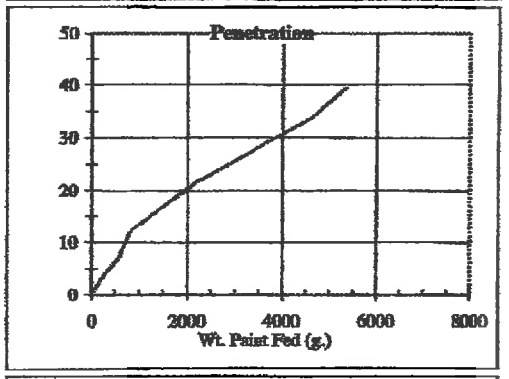
FILTER DESCRIPTION:
White/Yellow highloft fiberglass
PAINT DESCRIPTION:
High Solids Baking Enamel (S.W. #1 Permaclad 2400, red)
PAINT SPRAY METHOD:
Conventional Air Gun at 40 PSI
SPRAY FEED RATE:
137 gr./min. 130 cc./min.
AIR VELOCITY:
150 FPM

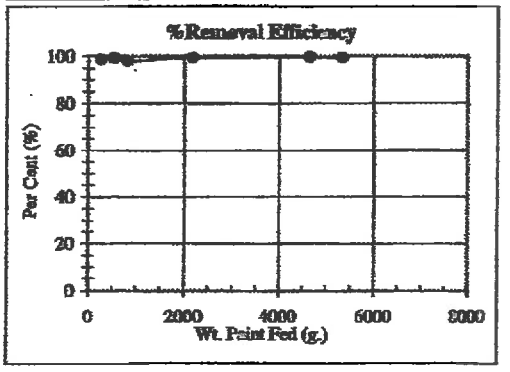
Test Results

INITIAL PRESSURE DROP of Clean Test Filter
0.02 in. water
FINAL PRESSURE DROP of Loaded Test Filter
0.11 in. water
WEIGHT GAIN on TEST FILTER & Test Frame Trough
4038 grams
PAINT HOLDING CAPACITY of TEST FILTER
1173 grams = 2.6 lbs.
PAINT RUN-OFF
2865 grams
WEIGHT GAIN on FINAL FILTER
39.4 grams = PENETRATION
AVERAGE REMOVAL EFFICIENCY of TEST FILTER
99.03 %









Test Engineer: Todd Kruger
Supervising Engineer: K. C. Kwok, Ph.D.

Belt Conveyor
RECOVERY SYSTEMS

INDUSTRIAL
Blast Facilities
by CLEMCO®

Belt Conveyor Abrasive Recovery Systems are Engineered to be—

- *Low operating cost.*
- *Suitable for steel and coarse abrasives.*
- *Simple mechanical system suitable for all sizes of blast rooms.*
- *Consumes only a fraction of the power required to run a screw conveyor system.*
- *Very low maintenance - sustains very little wear compared with screw conveyor systems.*
- *Capable of moving a large quantity of material over a long distance.*
- *Controlled abrasive-load design prohibits belt overload and prevents media overflow.*

An abrasive blast facility reduces blasting costs and environmental contamination by bringing blasting indoors, making possible the use of recyclable abrasives. To make the most of recyclable abrasive, an efficient abrasive recovery system automates the media recovery and cleaning processes.

The Clemco Belt Conveyor Recovery System combines simple, reliable, technology with high quality components for a system that is rugged, durable, and economical. The Clemco BCR system is built in custom lengths to suit existing or new blast rooms. It is engineered to suit rooms of all sizes.

A standard complete system comprises recovery hoppers, floor grating, a drum motor for each belt run, a bucket elevator, and an air-wash abrasive cleaner.

NOTE: The system lends itself to processing and cleaning heavy, coarse abrasives. For lightweight media, ask your Clemco Distributor about our M-Section® Recovery Systems.

Simple

The Clemco BCR system features multiple floor collection hoppers installed in a trench in the blast room floor. Partial-area systems can be configured in a single run, in H-, L-, or U-patterns or whatever layout suits the appliction. Floor gratings, flush with the blast room floor, cover the hoppers. Abrasive falls through the grating, into the hoppers, through a metering tube, falling on the 12-inch wide belt below. The distance between the hopper metering tube and the conveyor belt is set for the optimal media flow-rate which prevents belt overload.

Reliable

A 2-HP drum motor drives each belt, conveying material to the bucket elevator for transfer to the abrasive cleaner. Angled rollers beneath the belt form a V-shape support to contain the abrasive on the belt. Abrasive drops off the belt into the bucket elevator hopper. Sturdy buckets raise the abrasive to the air-wash cleaner, where the abrasive is separated from dust and debris. Debris falls into a waste container, dust is drawn into the dust collector, and reusable, clean abrasive falls into a hopper atop the blast machine.

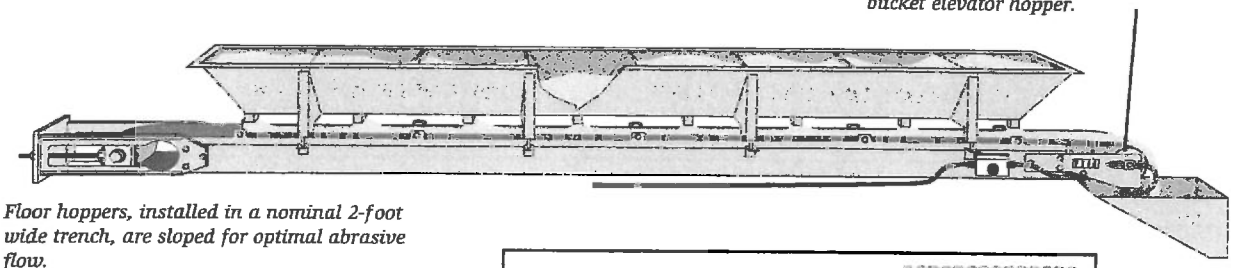
Durable

Collection hoppers are constructed of rugged 10-gauge steel making them ideal for wear resistance and long life. For each run of hoppers, a heavy-duty, multi-ply, endless belt is powered by an electric drum motor. The belt is fabricated to resist wear. The durable bucket elevator assembly has a reinforced PVC belt and tough but lightweight polyethylene buckets.

Practically Maintenance Free

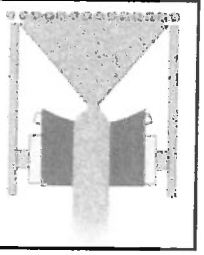
Spent abrasive falls into or is swept into the floor collection hopper s and feeds by gravity through a metering tube onto the moving belt.

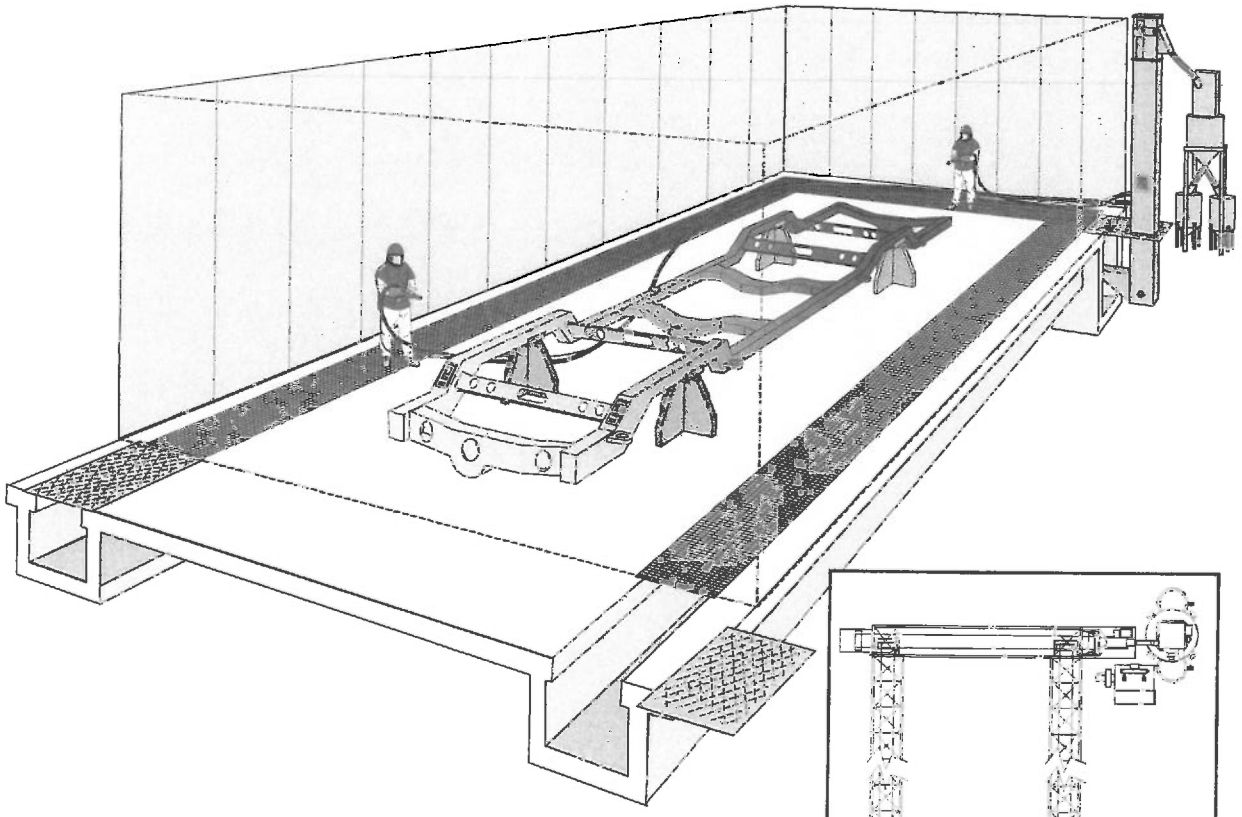
The drum motor, installed at the bucket elevator end, feeds the media into the bucket elevator hopper.



Floor hoppers, installed in a nominal 2-foot wide trench, are sloped for optimal abrasive flow.

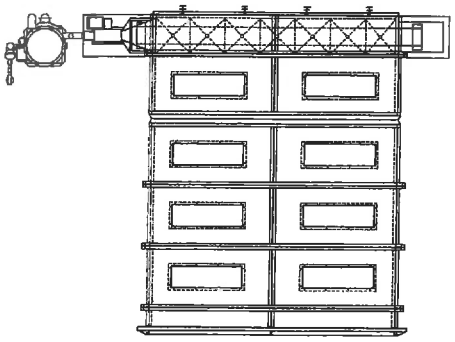
V-shape rollers support the belt, contain the media, and prevent overflow.



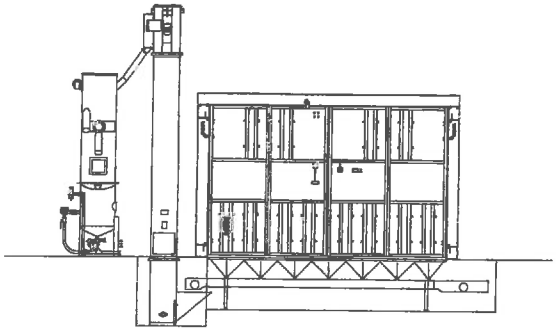


This 22 feet wide x 78 feet long x 17 feet high r oom features a U-pattern floor, bucket elevator assembly, abrasive cleaner, storage hopper, two 6 cubic foot capacity blast machines and a dust collector to ventilate the r oom. Media used: steel grit.

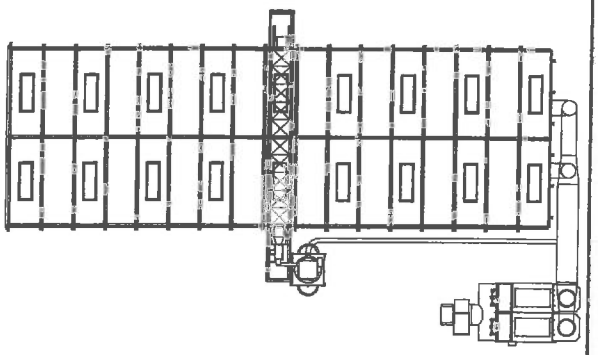
System Configuration Examples



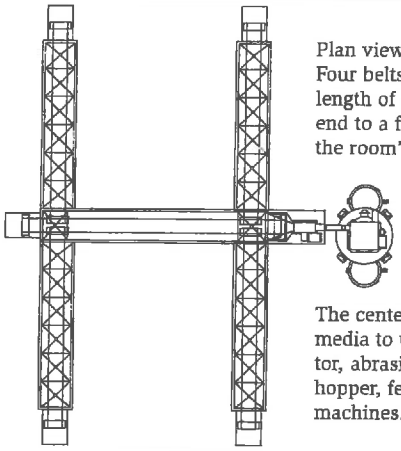
Plan view: Room size 14 ft wide x 18 ft long x 9 ft high. Single belt system runs width of room to bucket elevator and abrasive cleaner mounted atop blast machine.



Elevation view: Pit depth will differ depending upon system configuration. Deeper pit required for multi-belt systems.



Plan view: Room size 20 ft wide x 60 ft long x 16 ft high. Single belt runs width of room in center to bucket elevator, abrasive cleaner, hopper, and two blast machines.



Plan view: 'H' configuration; Four belts serve the full length of room from each end to a fifth belt located in the room's center.

The center belt moves media to the bucket elevator, abrasive cleaner, and hopper, feeding two blast machines.

Standard Specifications:

The Belt Conveyor Recovery System assembly includes: a series of abrasive collection hoppers, each with metering tube, uniform load steel grating, rated 250 pounds per square foot, 12-inch wide belt assembly, 2-HP drive motor for each belt, bucket elevator, and air-wash abrasive cleaner. Specifications and functional components may differ depending upon system configuration and size.

Each system is engineered to suit specific customer requirements for new or existing blast rooms.

Standard

- Belt: . . . . . 12" wide
- Belt Drive Drum Motor: . . . 2 HP
- Floor Grating: . . . . . 250 lbs per square foot uniform load
- Trench width: . . . . . nominal 2-foot width
- Trench depth: . . . . . depends upon system configuration

A worldwide network of Clemco offices and Authorized Distributors are staffed by experienced personnel to assist with facility planning, installation, and service.

Industrial Facility Systems and Services

Clemco Industries Corp. designs and builds blast rooms and room components to suit customer applications for all types of blast media. Rooms, floor systems, reclaimers, hoppers, and dust collectors can be purchased separately or as complete turnkey systems. Field service engineers are available for start up, installation supervision, maintenance audits, and training.

Options

- Grating heavier than 250 lb per square foot
- Abrasive storage hopper
- Electrical control panel
- Blast Machine

Distributed by:

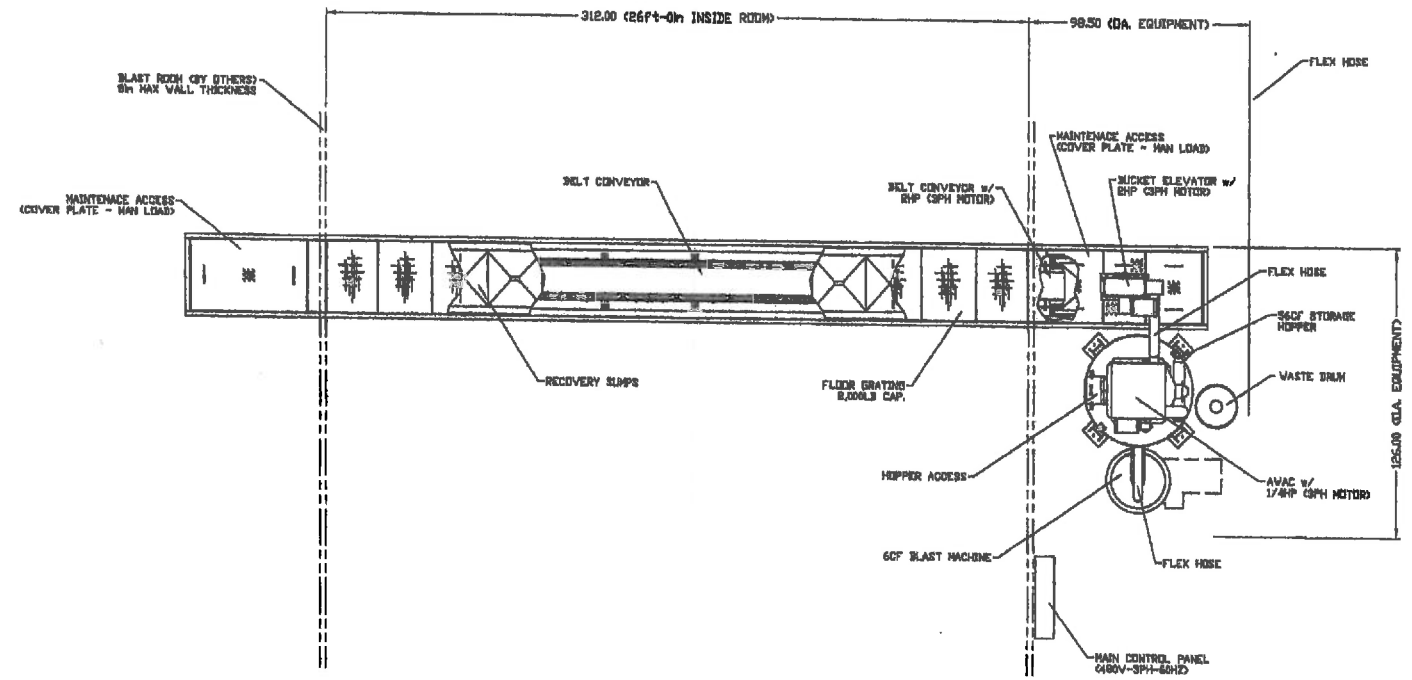
Contact your authorized distributor to request our RFQ form or download it from www.clemcoindustries.com

ISO 9001:2008 certified. Clemco is committed to continuous product improvement. Specifications are subject to change without notice.

 • One Cable Car Drive • Washington, MO 63090 • Phone (636) 239-4300 • Fax 800 726-7559

Stock No. 25323 info@clemcoindustries.com • www.clemcoindustries.com Job No. 2349-1108 Rev. B 1210

F4.4.7.2 (3) REV. 1 1-1-01



PLAN VIEW

ORIGINAL

NOTES:
1. CUSTOMER TO VERIFY OVERALL DIMENSIONS TO INSURE CLEARANCE WITH EXISTING STRUCTURE.
2. ALL ERECTION, WIRING, DUCTING, FOUNDATION AND CALLOUTS INDICATED WITH AN (*) ARE BY CUSTOMER. "BY CUSTOMER" INDICATES A SUPPLIER OTHER THAN CLEMCO INDUSTRIES.
3. THIS DRAWING IS FOR CUSTOMER APPROVAL ONLY, UNLESS OTHERWISE NOTED.
4. DO NOT SCALE DRAWING.
5. FOR SUGGESTED DUCTING DETAILS, SEE DWG. DFSK-80016

SPECIFICATIONS:
AIR VOLUME - 600 CFM (AVAC)
VENTILATION RATE - N/A
CLOTH AREA - N/A
AIR/CLOTH RATIO - N/A
STATIC PRESSURE - N/A
ELECTRICAL REQUIREMENTS - 480V-3PH-60HZ

	BY	DATE
APPROVED - WITHOUT EXCEPTIONS		
APPROVED - EXCEPT AS NOTED		
ELECTRICAL POWER FOR MOTORS IS _____ VOLTS _____ PH. _____ HZ.		
SINGLE PHASE 110/120 VOLT POWER FOR LIGHTS 15/15 NOT AVAILABLE (AMPS REQUIRED)		

NO.	DATE	DIVISION	BY	APPD.
1	04-10-12	CHG'D ORIENTATION OF EQUIP. PER CUSTOMER	RG	
0	04-10-12	ISSUE	RG	

DRAWN BY	DATE	ENG. BY	DATE
RG	04-09-12		
CHK'D BY	DATE	APPR. BY	DATE
TS	04-10-12		

MAR-12 | 15596-12 | APACHE RIVER DBA DELOLE-L
DATE | JOB NO. | PREPARED FOR

CLEMCO INDUSTRIES

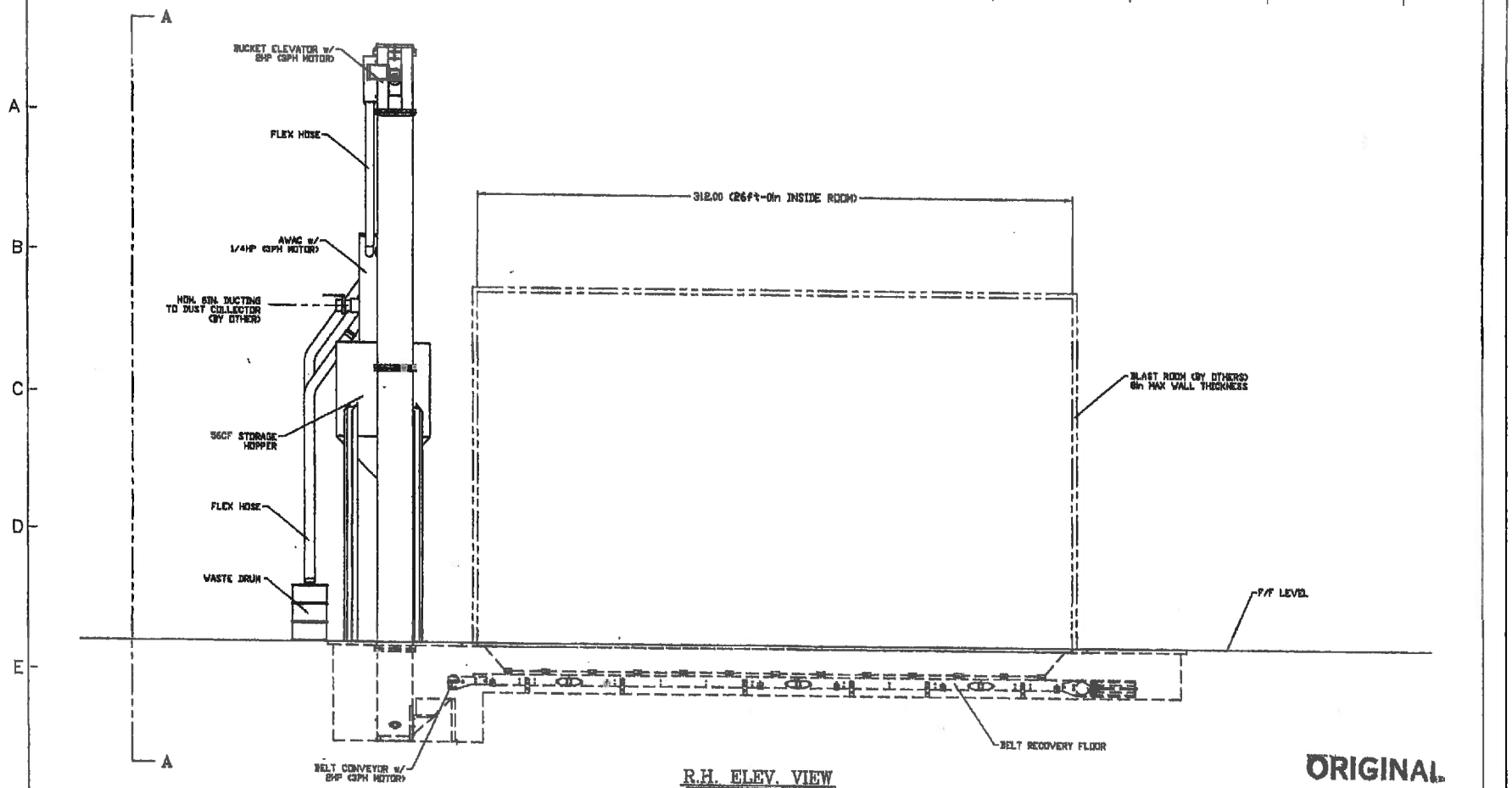
SCALE: N/A

GENERAL ARRANGEMENT FOR
26ft BELT CONVEYOR
RECOVERY SYSTEM

DRAWING NO. B5596G001 REV. 1

SHEET 1 OF 3

F4.4.7.2 (3) REV. 1 1-1-01



R.H. ELEV. VIEW

ORIGINAL

NOTES:
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5. FOR SUGGESTED DUCTING DETAILS, SEE DWG. DFSK-50016

SPECIFICATIONS:

AIR VOLUME - 600 CFM (AWAC)
VENTILATION RATE - N/A
CLOTH AREA - N/A
AIR/CLOTH RATIO - N/A
STATIC PRESSURE - N/A
ELECTRICAL REQUIREMENTS - 480V-3PH-60HZ

APPROVED ~ WITHOUT EXCEPTIONS	
APPROVED ~ EXCEPT AS NOTED	
ELECTRICAL POWER FOR MOTORS IS _____ VOLTS _____ PH. _____ HZ.	
SINGLE PHASE 110/120 VOLT POWER FOR LIGHTS IS/IS NOT AVAILABLE (AMPS REQUIRED)	

NO.	DATE	REMARKS	BY	APP'D
1	04-10-12	CHG'D ORIENTATION OF EQUIP. PER CUSTOMER	RG	
0	04-10-12	ISSUE	RG	

DATE	JOB NO.	PREPARED FOR
MAR-12	9596-12	APACHE RIVER DBA DOUBLE-L

CLEMCO INDUSTRIES

SCALE: N/A

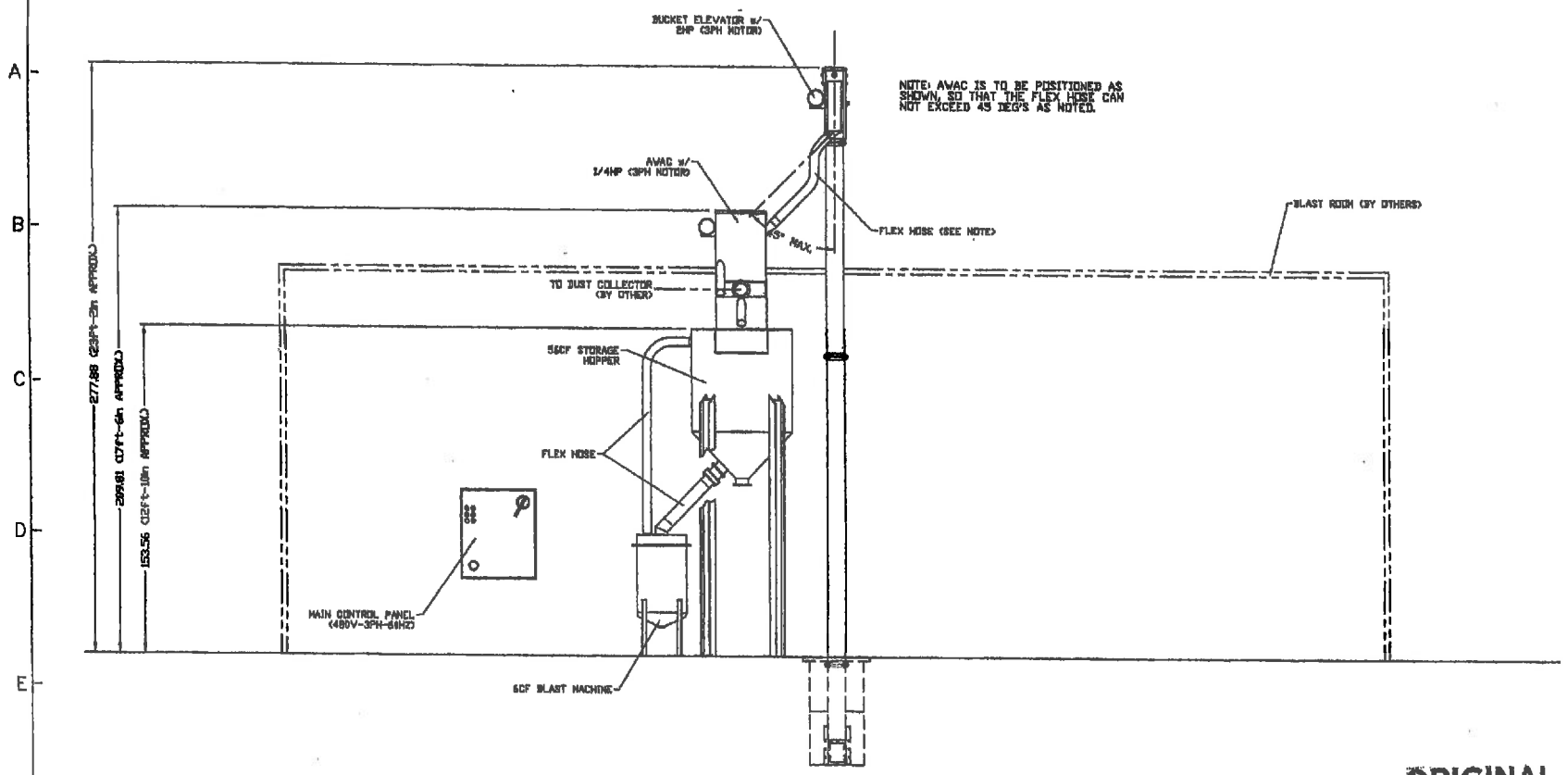
GENERAL ARRANGEMENT FOR
26ft BELT CONVEYOR
RECOVERY SYSTEM

DES. BY	RG	DATE	04-09-12	APP'D BY	DATE
DRN. BY	GS	DATE	04-10-12	APP'D BY	DATE

DRAWING NO. 955960001 REV. 1

SHEET 2 OF 3

F4.4.7.2 (3) REV. 1 1-1-01



VIEW A~A

ORIGINAL

NOTES:
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4. DO NOT SCALE DRAWING.
5. FOR SUGGESTED DUCTING DETAILS, SEE DWG. DFSK-50016

SPECIFICATIONS:

AIR VOLUME – 600 CFM (AWAC)
VENTILATION RATE – N/A
CLOTH AREA – N/A
AIR/CLOTH RATIO – N/A
STATIC PRESSURE – N/A
ELECTRICAL REQUIREMENTS – 480V-3PH-60HZ

	STAMP	DATE
APPROVED ~ WITHOUT EXCEPTIONS		
APPROVED ~ EXCEPT AS NOTED		
ELECTRICAL POWER FOR MOTORS IS _____VOLTS _____PH._____HZ.		
SINGLE PHASE 110/120 VOLT POWER FOR LIGHTS IS/IS NOT AVAILABLE (AMPS REQUIRED)		

NO.	DATE	REVISION	BY	APPD.
1	04-10-12	CHG'D ORIENTATION OF EQUIP. PER CUSTOMER	RG	
0	04-10-12	ISSUE	RG	

DRWN BY	DATE	APPD. BY	DATE
RG	04-09-12		
CHKD BY	DATE	APPD. BY	DATE
GS	04-10-12		

MAR-12 | 5596-12 | APACHE RIVER DBA DOUBLE-L
DATE | JOB NO. | PREPARED FOR

CLEMCO INDUSTRIES

SCALE: N/A

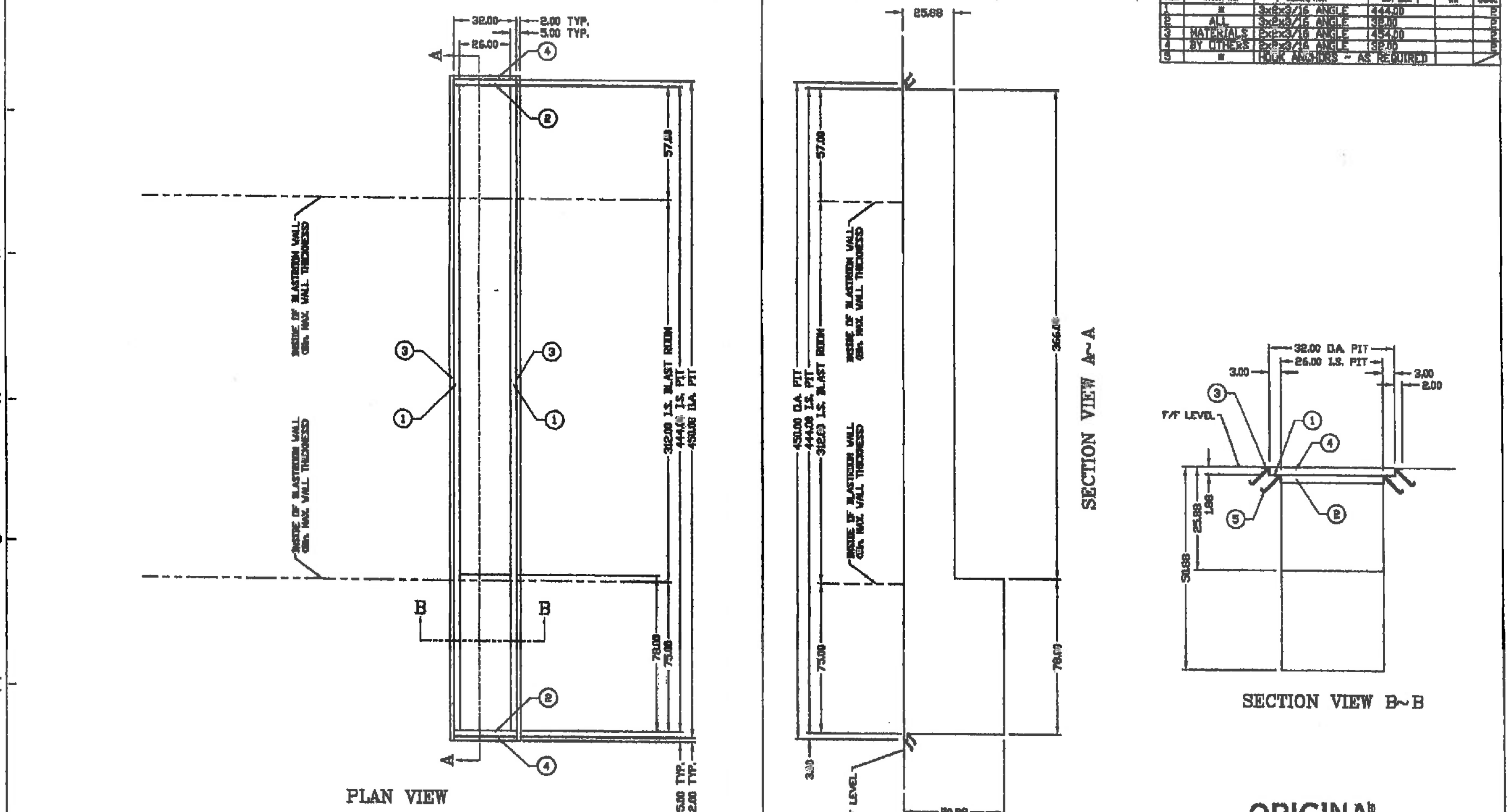
GENERAL ARRANGEMENT FOR
26ft BELT CONVEYOR
RECOVERY SYSTEM

DWG. NO. 35596G001 REV. 1

SHEET 3 OF 3

F4.4.7.2 (2) REV. 1 1-1-01

ITEM	STOCK NO.	DESCRIPTION	CUT SIZE	WT.	QUAN.
1	*	3x2x3/16 ANGLE	444.00		2
2	ALL	3x2x3/16 ANGLE	32.00		2
3	MATERIALS	2x2x3/16 ANGLE	454.00		2
4	BY OTHERS	2x2x3/16 ANGLE	32.00		2
5	*	HOOK ANCHORS ~ AS REQUIRED			



ORIGINAL

NOTES:

1. THIS DRAWING IS FOR CUSTOMER APPROVAL ONLY, UNLESS OTHERWISE NOTED.
2. EQUIPMENT AND CALLOUTS INDICATED WITH AN ASTERISK (*) ARE BY CUSTOMER. "BY CUSTOMER" INDICATES A SUPPLIER OTHER THAN CLEMCO INDUSTRIES COMPANY.
3. IF IN A HIGH WATER TABLE AREA, FOUNDATION WATERPROOFING AND SLOPED REGIONS IN CROSS CONVEYOR TROUGH, AS IN SECTION VIEW, IS RECOMMENDED.
4. SHIMS (3" x 1'-6") TO BE INSTALLED AT LOCATIONS NOTED ON PLAN VIEW TO MAINTAIN TOP OF CROSS CONVEYOR, AS SHOWN IN VIEW [illegible] FOR VERTICAL POSITIONING OF [illegible], BOLTS AND SHIMS ARE FOR LATERAL POSITIONING ONLY, AND ARE NOT TO CARRY ANY LOADS.
5. EXPANSION TYPE ANCHORS ARE LOCATED AT INSTALLATION, AND MAY BE SUBSTITUTED FOR POURED-IN-PLACE ANCHOR BOLTS, AT CUSTOMER'S DISCRETION.
6. DO NOT SCALE THIS DRAWING.

SPECIFICATIONS:

1. CONCRETE FOUNDATION TO BE LEVEL AND SQUARE ± 1/8"
2. CONCRETE CURBS AND SIDES TO BE STRAIGHT AND PARALLEL ± 1/8"
3. TROWEL TOP OF CONCRETE CURBS SMOOTH ± 1/8"
4. HOLD ANCHOR BOLT LOCATION ± 1/16"
5. ANCHOR BOLT PROJECTION 1-1/2" MIN.
6. REINFORCING BAR SIZE AND LOCATION TO BE DETERMINED BY CUSTOMER.

	SIGNED	DATE
APPROVED ~ WITHOUT EXCEPTIONS		
APPROVED ~ EXCEPT AS NOTED		

NO.	DATE	REVISION	BY	APPD.
0	04-10-12	ISSUE	RG	

DATE	JPC NO.	PREPARED FOR
MAR-12	5596-12	APACHE RIVER DBA DOUBLE-L

CLEMCO INDUSTRIES

SCALE: N/A

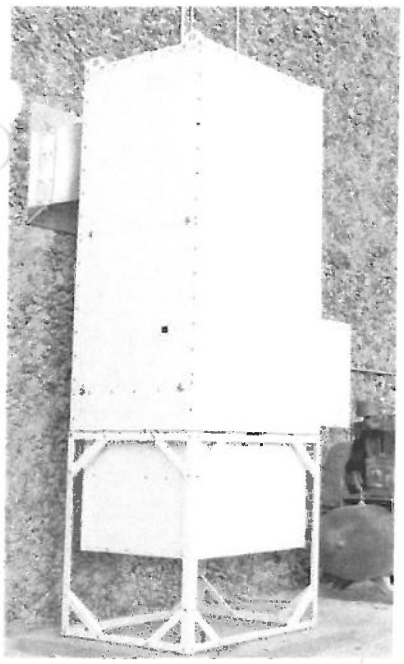
FOUNDATION PLAN FOR
BELT RECOVERY FLOOR

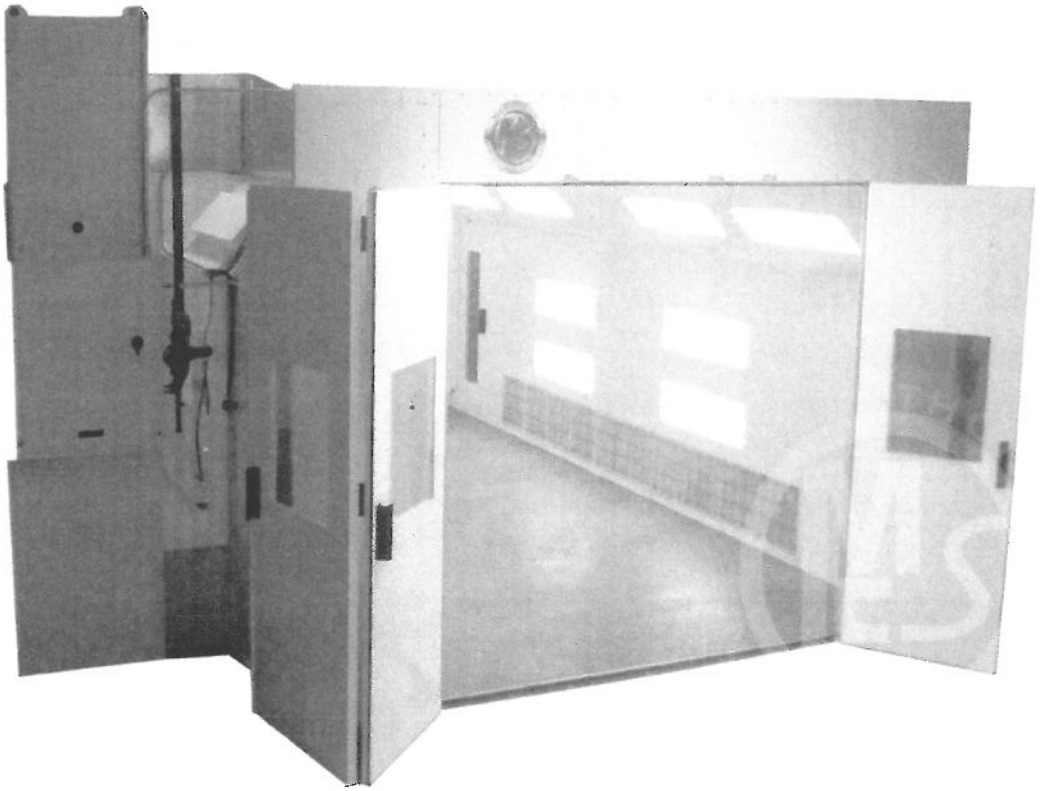
					DRAWING NO.	REV.
DWN. BY RVG	DATE 04-09-12	APPD. BY	DATE		85596F001	1
CHKD. BY GS	DATE 04-10-12	APPD. BY	DATE		SHEET 1 OF 1	

BANANZA®

SPRAY-CURE™ B-Series
Direct-Fired Heating, Ventilation and Make-up Air Systems

- Saves time and money – No heat exchangers, flues or reflectors to clean and maintain. Heaters built with high quality, UL or CSA listed components.
- Quick delivery – Most heaters built and shipped in days.
- Versatile design meets shop space demands – Heaters can be mounted indoors or outdoors, and can be used with down draft, semi-down draft and cross draft spray booths. Makeup air also available for prep deck and stations.
- Low-cost installation – Advanced SPRAY-CURE™ technology helps reduce cure time and increase productivity.
- Positive pressurization helps improve operation and paint job quality - SPRAY-CURE™ heaters bring in a controlled amount of fresh, tempered air, which helps keep dirt and debris out.
- Energy-efficiency helps reduce energy costs - SPRAY-CURE™ heaters are 100% thermally efficient, which means that all of the heat generated by combustion is released into the spray booth, minimizing heat loss.





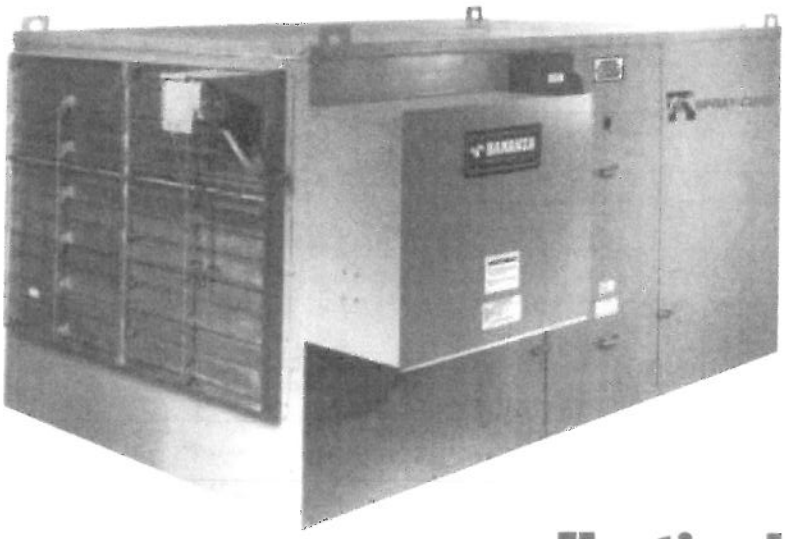
1.800.255.3416

SPRAY-CURE™ B-Series

B-Series with SPRAY-CURE™ technology air handlers help improve spray booth air quality and shop productivity.

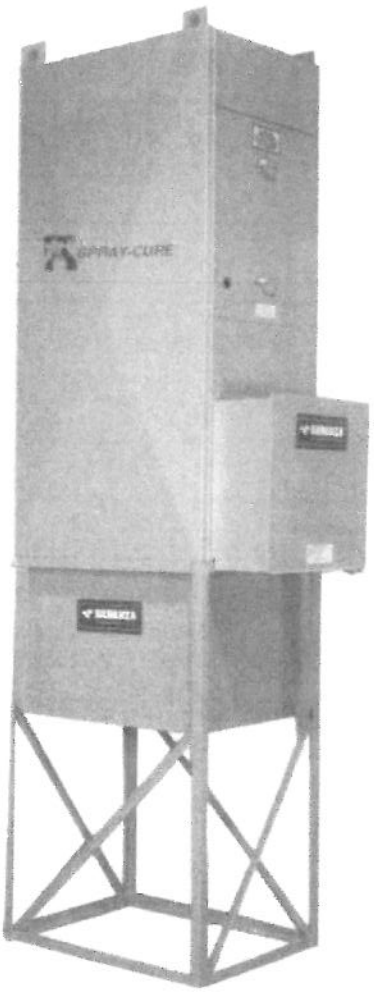
Model	B-350	B-650	B-1000	B-2000	B-3000	B-4000	B-5000
CFM	1,000 - 4,000	4,000 - 10,000	7,000 - 14,000	12,000 - 25,000	25,000 - 40,000	35,000 - 47,500	45,000 - 60,000
Output [MBH]*	110 - 400	440 - 756	760 - 1500	1300 - 2700	2700 - 4100	3780 - 5130	4860 - 6480

* 1MBH = 1,000 Btu/h



B-3000 Heater

The B-3000 is typically applied to larger size truck booths or aircraft finishing facilities.

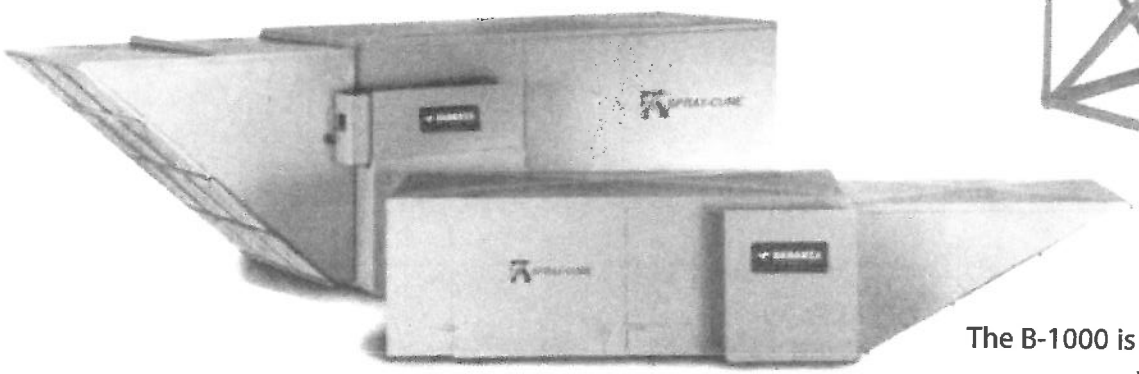


B-1000 Vertical Heater

The B-1000 vertical heater is an economically priced space saver - it doesn't take up floor space.

B-2000 Heater

The B-2000 is generally applied to truck booths and multiple prep stations.



B-1000 Heater

The B-1000 is used in conjunction with new or existing automotive spray booths.

SPRAY-CURE™ B-Series Features

Reliable, Efficient System Operation Provided by:

- 30:1 fully modulating burner that maintains 100% combustion efficiency.
- Double-width, double-inlet, forward-curved centrifugal fan built for long life.
- Energy-saving ignition system.
- System that puts 100% of the available heat in the airstream, not out a flue.
- Unit that uses up to 50% less energy.
- Remote Control Panel for easy operation and remote temperature adjustment.
- Electronic fuel modulation providing immediate response.
- UV scanner for excellent reliability and durability on Models B-650 — B-5000.
- Temperature dial for quick, easy adjustment.
- Compliance to ETL per ANSI Z83.18 or Z83.4 standards.
- Industry-leading 80-point checklist to help facilitate trouble-free startup.
- Weatherproof fusible disconnect.
- Adjustable drive sheaves.
- Self-checking flame relay.
- Dual safety and manual safety shut-off valves.

Ease of Maintenance Provided by:

- Large access panel for easy maintenance of blower, motor, drives and burner.
- Blower installed downstream of burner for convenient access.

Long Lasting Construction Provided by:

- Heavy-duty, corrosion-resistant, galvanized steel construction.
- Sturdy, integral frame that is screwed and bolted together for durability and longer service life.
- Unpainted galvanized steel or white finishes available.
- Heavy-duty, factory-installed motor and drive package designed for long-lasting, performance.
- Heavy-duty, pre-lubricated bearings provide up to 30,000 hours of ABMA L-10 performance.
- Enclosed weatherized cabinet.

Other B-Series Options:

- 1 Ø ODP/TEFC Motor.
- Profile damper (Included as standard on B-4000 and B-5000).
- 10" or 20" Roof Curb simplifies rooftop mounting.
- Inlet Hood protects against water entrainment.
- Filter Section with polylink or aluminum filters for longer equipment life of internal components.
- Motorized inlet and discharge dampers.
- FM/IRI approved gas trains.
- Upright heater stand or legs of varying heights.
- Variable frequency drive.

B-Series SPRAY-CURE™ Controls' Options:

- Remote Control Panel with burner and blower switches for easy operation.
- 120 V control transformer.
- Auxiliary relays for exhaust fans.
- Digital temperature display.
- Purge and cure timers.
- Remote discharge temperature control.
- Variable speed exhaust controls.

Generation III SPRAY-CURE™ B-Series Features

- Recirculation box pre-engineered into vertical unit for use of return air.
- For downdraft paint booth applications.
- Easy setup and smooth integration without need for elaborate ductwork.
- Reducing use of outside air during cure mode by 40% allows for:
  - Reduced cure time.
  - Gas savings.
  - Higher product throughput.

Standards

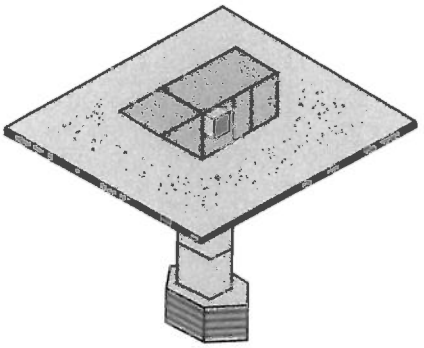
- All heaters are built to the latest ANSI Standards Z83.4b-2002 specifically for SPRAY-CURE™ applications

Patents

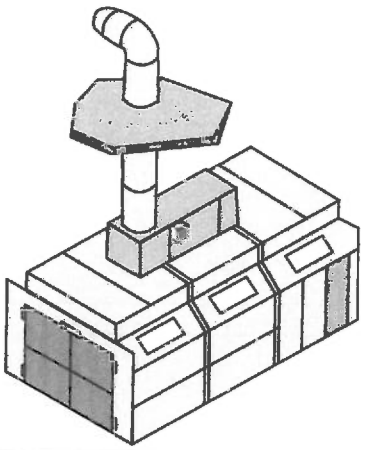
- U.S. 4429679
- Canada 1, 189840
- Germany DE 3236343
- Great Britain GB2119082B & GB2158571B

Installation Options

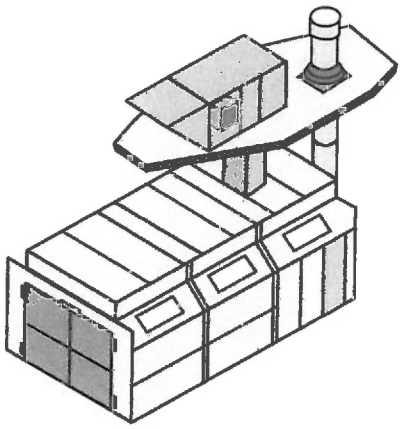
Outside Roof Mounted - Bottom Discharge



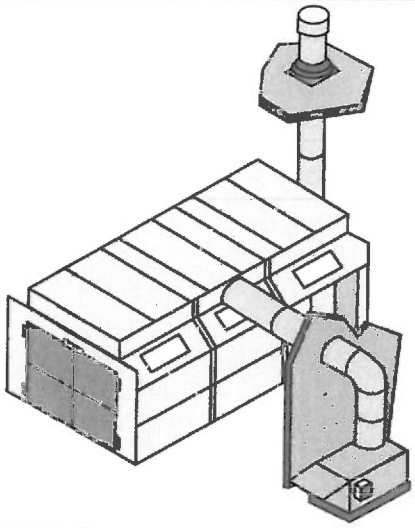
Booth Ceiling Mounted - Bottom Discharge



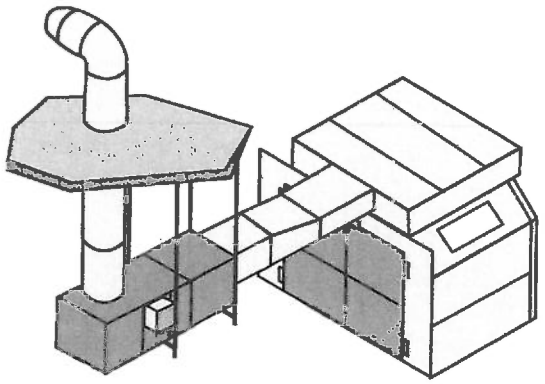
Outside Roof Mounted - Bottom Discharge



Outside Pad Mounted - Top Discharge



Inside Ceiling Suspended - End Discharge



Installation Code and Annual Inspections:
All installations and service of BANANZA® products must be performed by a contractor qualified in the installation and service of products sold and supplied by Bananza and conform to all requirements set forth in the BANANZA® manuals and all applicable governmental authorities pertaining to the installation, service and operation of the equipment. To help facilitate optimum performance and safety, Bananza recommends that a qualified contractor annually inspect your BANANZA® products and perform service where necessary, using only replacement parts sold and supplied by Bananza.

Further information: Applications, engineering and detailed guidance on systems design, installation and product performance is available through BANANZA® representatives. Please contact us for any further information you may require, including the Installation, Operation and Service Manual.

This product is not for residential use.

This document is intended to assist licensed professionals in the exercise of their professional judgement.

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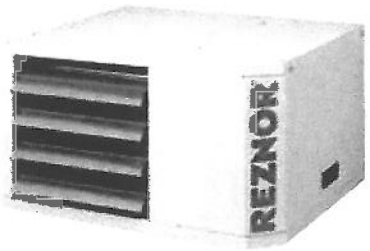
REZNOR

Model UDAS



Separated Combustion, Low Static Commercial/Industrial Unit Heaters

Sizes 30-125 carry an additional approval for use in residential garage/workshops under CSA International Requirement 10.96 - U.S. and CR96-0005 - Canada

CSA 2.6b ANSI Z83.8b

DESCRIPTION

Reznor® V3 Series Model UDAS gas-fired separated combustion unit heaters are available in 14 sizes ranging from 30,000 to 400,000 BTUH gas input. All sizes are approved for commercial/industrial installations. Sizes 30-125 carry an additional approval for use in attached residential garage/workshop application. Model UDAS heaters are designed for 82-83% thermal efficiency and are approved for installation in the United States and Canada by the Canadian Standards Association (CSA).

Reznor® V3 Series unit heaters have a refreshing new appearance with a glossy white cabinet finish and less visible hardware. Each size cabinet is easily suspended from either 2 or 4 suspension points. Or, an optional hanger kit for Sizes 30-125 allows for ceiling mounting. The low voltage terminal strip on the outside of the cabinet makes connecting control wiring easy with no panels to remove. The addition of a "G" terminal to the low voltage strip, along with the new design of the circuit board, allows for fan only operation (without adding relays). All units have a factory installed gas line nipple to the exterior of the cabinet for easy gas service connection.

The preeminent new internal feature is the TCORE² ® heat exchanger and single burner combustion system. Other standard features include a single-stage gas valve, multi-try direct spark ignition with timed lockout, pressure switch to verify vent flow, resiliently isolated venter motor, venter wheel with improved housing, resiliently isolated axial fan and motor assembly, a high temperature limit control, interlock door switch, and a built-in disconnect switch. Sizes 30-125 also include a flame rollout safety switch. Operation is controlled through an integrated circuit board. The circuit board monitors heater operation and has LED diagnostic indicator lights to identify abnormalities in control functions.

The 1ST ever separated combustion system in the commercial/industrial heating industry **was introduced on a Reznor heater** in the 1960s, and that proven technology is continued in this new separated combustion product. Model UDAS separated combustion units require installation of a specially designed combustion air/vent system including the unique concentric adapter box that allows for only one building penetration for both the vent and combustion air.

The new V3 Series unit heaters are designed to provide all the features you expect in a Reznor heater plus improved efficiency, easier installation, and a new look ~ ***both inside and out.*** Look for the unique white unit with no visible front and bottom hardware, deep red louvers, black side handle, and angled corner to know you have a genuine Reznor unit by Thomas & Betts.

STANDARD FEATURES

- Sizes 30-400 certified for commercial/industrial heating application
- Sizes 30-125 carry an additional approval for use in residential garage/workshop heating applications
- 82-83% Thermal efficient ~ ***TOP in its class!***
- 50-60°F Rise range
- TCORE² titanium stabilized aluminized steel heat exchanger
- Patented [4] single burner combustion system including a one-piece burner assembly
- 115/1/60 Supply voltage
- 115 Volt open fan motor with internal overload protection
- Transformer for 24-volt controls
- Integrated circuit board with diagnostic indicator lights
- Multi-try direct ignition with timed lockout
- Fan relay (included on the circuit board)
- Single-stage natural gas valve (field adjustable for operation to 9,000 ft. elevation [a])
- Vibration/noise isolated fan and venter motors
- Sealed control compartment houses all electrical components
- 2-pt ***and*** 4-pt Suspension ~ ***standard on all sizes***
- Built-in disconnect switch (20A @ 115V Rating)
- External terminal strip for 24-volt wiring
- Sealed junction box for supply wiring
- External gas connection
- Fully gasketed door panel with safety door switch
- Full fan guard ~ ***engineered for safety***
- Improved cabinet design with less visible hardware

[4] U.S. Patent No. 6,889,686.

OPTIONAL FEATURES - FACTORY INSTALLED

- Single-stage, propane gas valve (field adjustable for operation to 9,000 ft. elevation [B])
- Two-stage natural gas or propane gas valve - Sizes 60-400
- 409 or 316 Stainless steel heat exchangers
- Totally enclosed fan motor (Sizes 30-250, 115V only)

ACCESSORIES - FIELD INSTALLED

- Horizontal or Vertical Combustion Air/Vent Kit including concentric adapter [C]
- Thermostat
- Thermostat guard with locking cover
- Vertical louvers
- Downturn nozzle kits
- Gas conversion kits (natural and propane)
- Primary/secondary controls for zoning up to six units
- Ceiling suspension kit - Sizes 30-125
- Hanger kits for 1" pipe
- Stepdown transformer (for 208/115, 230/115 or 460/115 supply voltage)
- Manual shutoff valves

[B] Pressure switch change required for installations above 6,000 ft.
[C] Selection of either a horizontal or vertical combustion air/vent kit is required.

TECHNICAL DATA

Model UDAS

Size		30	45	60	75	100	125	150	175	200	225	250	300	350	400
Input Heating Capacity	BTUH	30,000	45,000	60,000	75,000	105,000	120,000	150,000	175,000	200,000	225,000	250,000	300,000	350,000	400,000
	(kw/h)	(8.8)	(13.2)	(17.6)	(22.0)	(30.8)	(35.2)	(44.0)	(51.3)	(58.6)	(65.9)	(73.3)	(87.9)	(102.6)	(117.2)
Thermal Efficiency (%)		82	83	83	83	83	83	83	83	83	83	83	83	83	83
Output Heating Capacity [D]	BTUH	24,600	37,350	49,800	62,250	87,150	99,600	124,500	145,250	166,000	186,750	207,500	249,000	290,500	332,000
	(kw/h)	(7.2)	(10.9)	(14.6)	(18.2)	(25.5)	(29.2)	(36.5)	(42.6)	(48.7)	(54.7)	(60.8)	(73.0)	(85.1)	(97.3)
Gas Connection (inches) [E]	Natural	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	3/4	3/4	3/4	3/4	3/4
	Propane	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	3/4	3/4	3/4	3/4	3/4
Vent Connection [F] (inches diameter)		4	4	4	4	4	4	5	5	5	5	5	6	6	6
Combustion Air Inlet [F] (inches diameter)		4	4	4	4	4	4	6	6	6	6	6	6	6	6
Control Amps (24 volt)		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Full Load Amps (115 volt)		1.9	2.4	2.4	3.3	3.9	5.1	3.8	3.8	4.6	7.5	7.5	11.0	11.0	11.0
Maximum Over Current Protection (115V) [G]		15	15	15	15	15	15	15	15	15	15	15	20	20	20
Normal Power Consumption (watts)		109	155	155	217	276	354	392	392	491	747	747	1086	1086	1086
Discharge Air Temperature Rise (°F)		50	55	60	60	60	60	60	60	60	60	60	60	60	60
Air Volume	CFM	456	629	769	961	1345	1537	1921	2242	2562	2882	3202	3843	4483	5123
	(M^3/min)	(12.9)	(17.8)	(21.8)	(27.2)	(38.1)	(43.5)	(54.4)	(63.5)	(72.5)	(81.6)	(90.7)	(108.8)	(126.9)	(145.1)
Discharge Air Opening Area	ft^2	0.96	0.96	1.25	1.25	2.01	2.01	2.56	2.56	2.56	3.51	3.51	4.79	4.79	4.79
	(M^2)	(0.09)	(0.09)	(0.12)	(0.12)	(0.19)	(0.19)	(0.24)	(0.24)	(0.24)	(0.33)	(0.33)	(0.45)	(0.45)	(0.45)
Output Velocity	FPM	475	656	616	770	668	763	752	877	1003	820	911	802	936	1069
	(M/min)	(145)	(200)	(188)	(235)	(204)	(233)	(229)	(267)	(306)	(250)	(278)	(244)	(285)	(326)
Fan Motor HP [H]	Open	0.02	0.03	0.03	0.06	1/30	1/20	1/6	1/6	1/6	1/4	1/4	1/2	1/2	1/2
	Enclosed	0.06	0.06	0.06	0.06	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/2	1/2	1/2
Fan Motor	RPM	1550	1550	1550	1550	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050
Fan Diameter	inches	10	10	12	12	16	16	18	18	18	20	20	24	24	24
Sound Level	dba @ 15 ft	40	40	40	49	54	55	51	52	53	56	56	59	61	62
Approximate Net Weight	lbs	55	60	68	73	97	102	173	188	188	204	216	270	295	307
	(kg)	(25)	(27)	(31)	(33)	(44)	(46)	(78)	(85)	(85)	(93)	(98)	(122)	(134)	(139)
Approximate Ship Weight	lbs	63	68	76	81	120	125	206	221	221	247	259	323	348	360
	(kg)	(29)	(31)	(34)	(37)	(54)	(57)	(93)	(100)	(100)	(112)	(117)	(147)	(158)	(163)

[D] CSA rating for altitudes to 2000 ft.
[E] Size shown is for gas connection to a single stage gas valve, not supply line size.
[F] Smaller and/or larger vent and combustion air pipe diameters may be allowed; refer to the Venting Installation Manual for Separated Combustion Units, Form I-V-SC. If vent diameter is different from vent connection, reducer/eniargers will be field-required.
[G] MOP = 2.25 x largest motor FLA + remaining load. Answer is rounded down to the next size of commercially available circuit breaker or fuse.
[H] All other information in this table is based on a heater equipped with a standard 115 volt open fan motor.

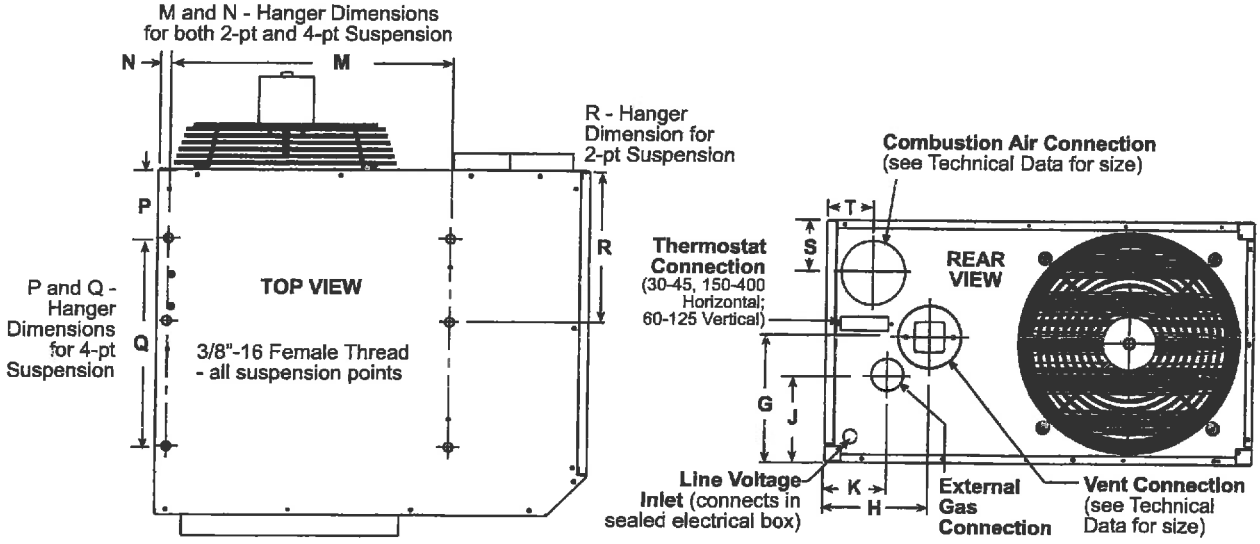
For installations where dirt, dust, and other air borne contamination is present in the indoor environment, it is recommended to use separated combustion units (Model UDAS). These models use air from outside the space for combustion. This will help reduce the build up of contaminates on the burner which would affect the combustion process. Refer to the installation manuals for recommended frequency of maintenance and cleaning.

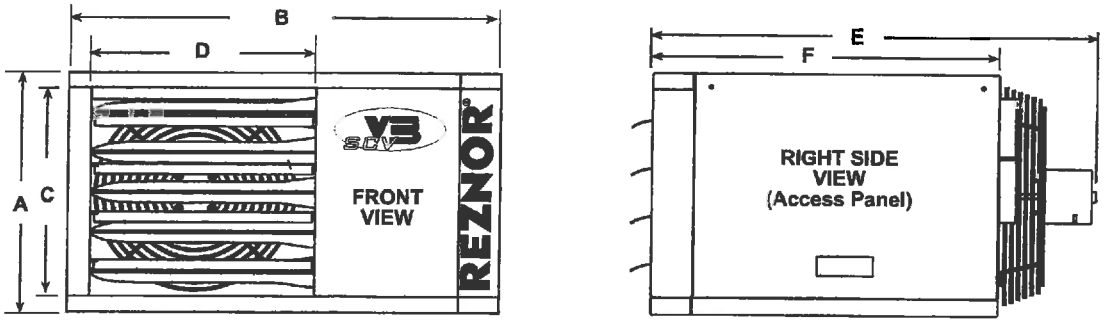
DIMENSIONS

Model UDAS ±1/16" (2mm)

Size	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R	S	T
30, 45	12 1/8	26 5/8	10	13 13/16	26	21 9/16	5 3/16	6 1/2	2 11/16	3 7/8	17 3/8	11/16	4 5/16	13	9 9/16	2 15/16	2 15/16
60	15 1/8	26 5/8	13	13 13/16	27	21 9/16	7 7/8	6 1/2	5 1/2	3 7/8	17 3/8	11/16	4 5/16	13	10 1/2	3 1/4	2 15/16
75	15 1/8	26 5/8	13	13 13/16	27 5/8	21 9/16	7 7/8	6 1/2	5 1/2	3 7/8	17 3/8	11/16	4 5/16	13	10 1/2	3 1/4	2 15/16
100	23 1/8	26 5/8	21	13 13/16	28 5/8	21 9/16	14 1/2	6 1/2	8 3/4	3 7/8	17 3/8	11/16	4 5/16	13	10 1/2	4 5/8	2 15/16
125	23 1/8	26 5/8	21	13 13/16	29 3/8	21 9/16	14 1/2	6 1/2	8 3/4	3 7/8	17 3/8	11/16	4 5/16	13	10 1/2	4 5/8	2 15/16
150, 175, 200	20 1/8	38 3/16	16	23	42	35 3/8	8 1/2	8 1/4	5 7/16	6 1/2	25 11/16	1 3/8	8 3/16	22 3/16	16 3/8	4 1/8	8 5/16
225, 250	26 1/8	38 3/16	22	23	42	35 3/8	13 1/16	8 13/16	9	6 1/2	25 11/16	1 3/8	8 3/16	22 3/16	15 5/8	5 9/16	8 5/16
300, 350, 400	34 1/8	41	30	23	42	35 3/8	17 1/16	9	11 13/16	7 5/16	27 11/16	1 3/8	8 3/16	22 3/16	16 3/16	9 1/16	8 9/16

Size	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R	S	T
30, 45	(308)	(676)	(254)	(351)	(660)	(548)	(132)	(165)	(68)	(98)	(441)	(17)	(110)	(330)	(243)	(75)	(75)
60	(384)	(676)	(330)	(351)	(686)	(548)	(200)	(165)	(140)	(98)	(441)	(17)	(110)	(330)	(267)	(83)	(75)
75	(384)	(676)	(330)	(351)	(702)	(548)	(200)	(165)	(140)	(98)	(441)	(17)	(110)	(330)	(267)	(83)	(75)
100	(587)	(676)	(533)	(351)	(727)	(548)	(368)	(165)	(222)	(98)	(441)	(17)	(110)	(330)	(267)	(117)	(75)
125	(587)	(676)	(533)	(351)	(746)	(548)	(368)	(165)	(222)	(98)	(441)	(17)	(110)	(330)	(267)	(117)	(75)
150, 175, 200	(511)	(970)	(406)	(584)	(1,067)	(899)	(216)	(210)	(138)	(165)	(652)	(35)	(208)	(564)	(416)	(105)	(211)
225, 250	(664)	(970)	(559)	(584)	(1,067)	(899)	(332)	(224)	(229)	(165)	(652)	(35)	(208)	(564)	(397)	(141)	(211)
300, 350, 400	(867)	(1,041)	(762)	(584)	(1,067)	(899)	(433)	(229)	(300)	(186)	(703)	(35)	(208)	(564)	(411)	(230)	(217)





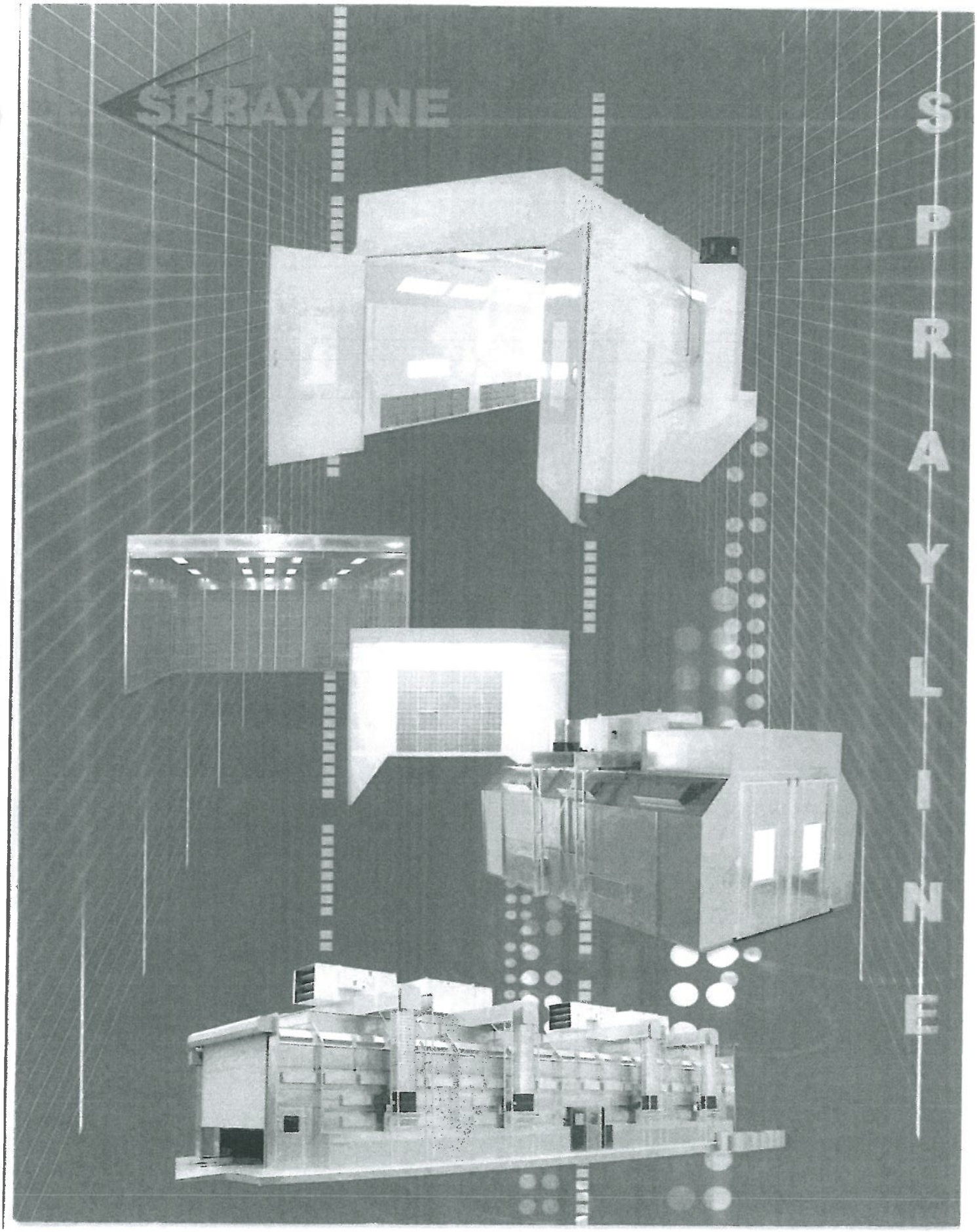
CLEARANCE FROM COMBUSTIBLES

Size	Top		Flue Connector		Access Panel [J]		Non-Access Side		Bottom [K]		Rear [L]	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
30-125	1	25	6	152	18	457	1	25	1	25	18	457
150-400	4	102	6	152	18	457	2	51	1	25	18	457

[J] Access Panel clearance is required for service clearance to controls

[K] Suspend the heater so that the bottom is a minimum of 5' (1.5M) above the floor.

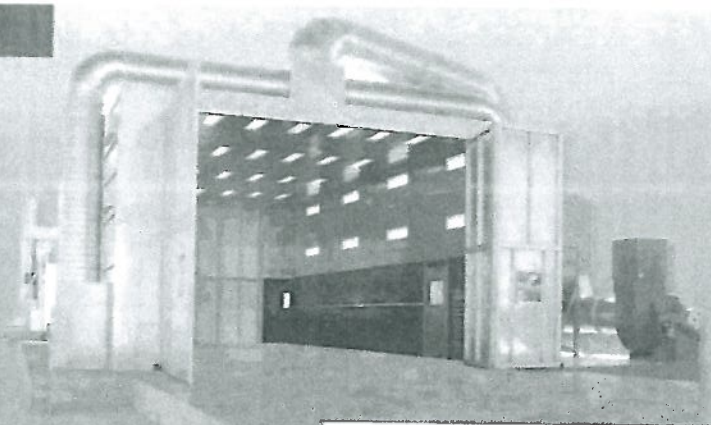
[L] Rear clearance is required for air movement. Rear clearance should be measured from the fan motor.
Refer to Reznor web site www.RezSpec.com for venting/inlet air requirements for Reznor Separated Combustion Units

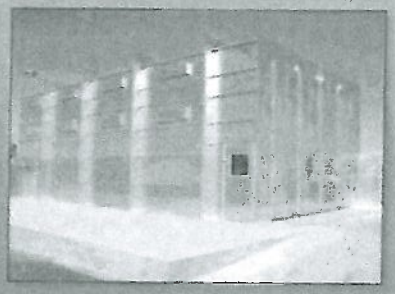

SPRAYLINE
SPRAYLINE

Blasting Enclosures

Custom Built Blasting Rooms

- Metal parts stripping
- Dust collection
- Pass through option available

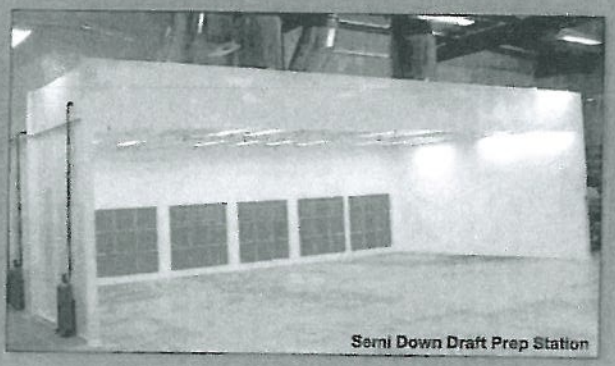




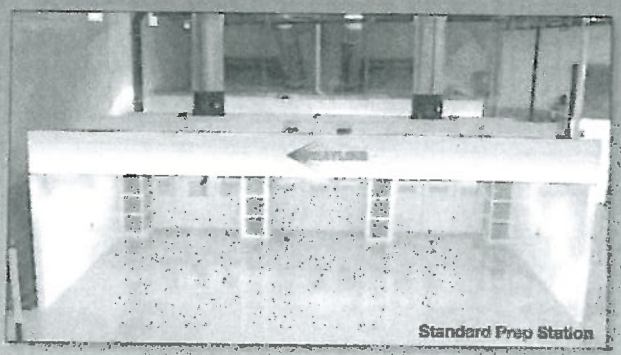
Prep Stations

Semi Down Draft Prep Station

- Fresh air or heated for painting and spot repair
- Free-span structure for ease of movement in work area
- High volume air movement for over spray removal and rapid drying of primer and paint



Semi Down Draft Prep Station



Standard Prep Station

Standard Prep Station

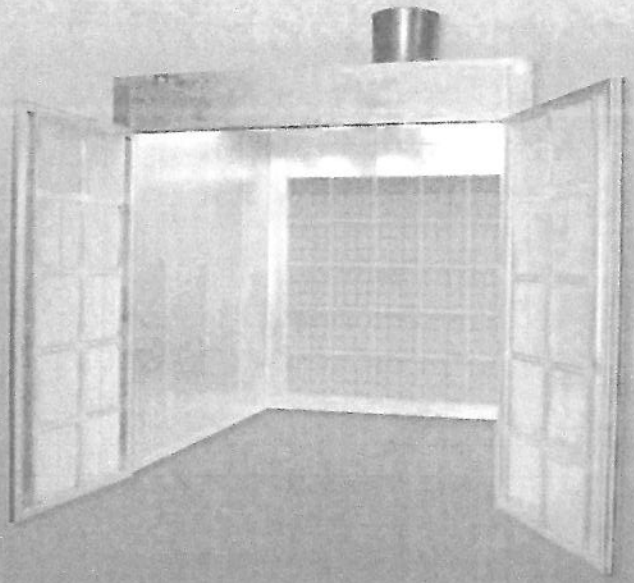
- Convenient work station for all application processes
- Various sizes to accommodate any size shop

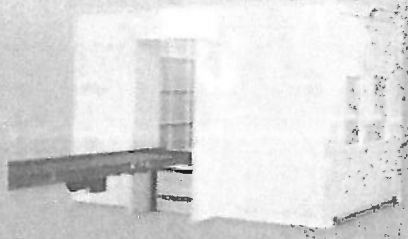
SPRAYLINE SPRAY BOOTHS

10110 Greenleaf Avenue
Santa Fe Springs, CA 90670

888.828.7747 Toll Free
562.941.5313 Tel
562.941.5612 Fax
www.sprayline.com

Enclosed Industrial Spray Booths



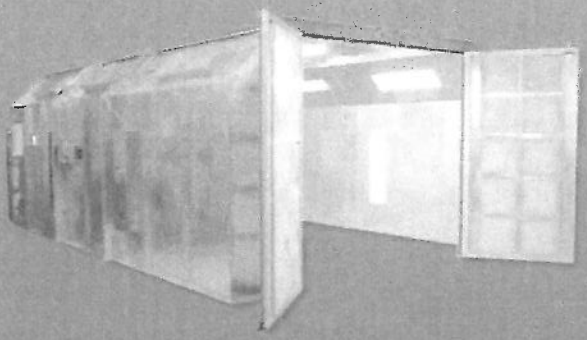


Large Enclosed Spray Booth

- Larger booth for all types of refinishing
- Gable lighting provides side and top illumination and high-air flow

Enclosed With Filter Doors

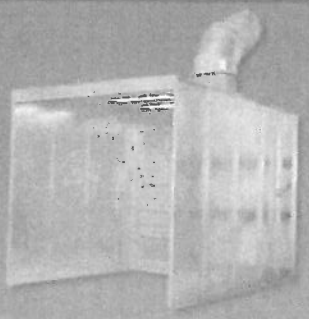
- Filter doors provide clean enclosed spray booth for high-end production finishing

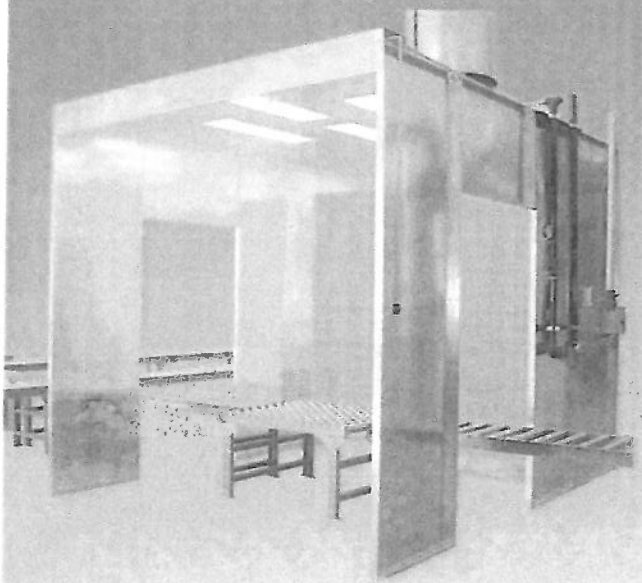


Open Face Industrial Spray Booths

Open Face Booths

- Allows convenient access for spraying large industrial objects





Various Sizes

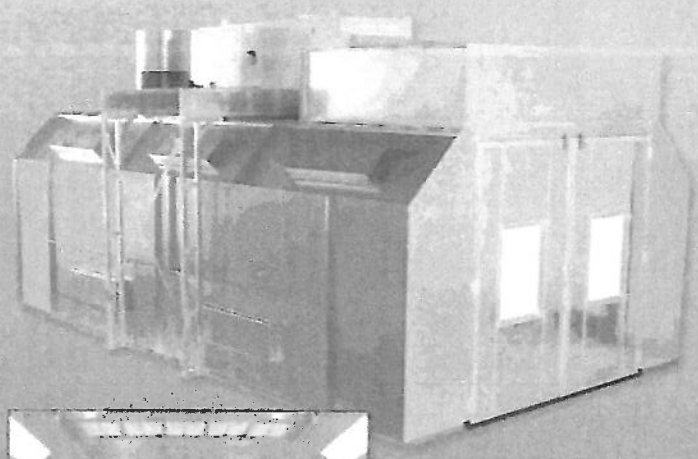
- Production Spray Booths manufactured to meet the needs of the industrial finisher

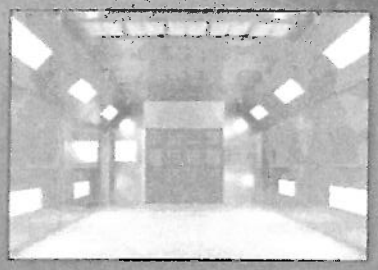
Standard Features

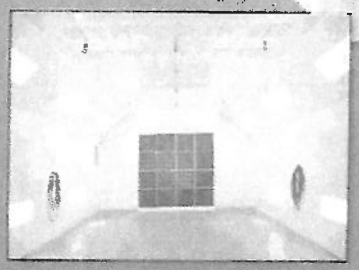
- Hi volume air movement for over spray removal
- Abundant lighting for increased visibility in work area

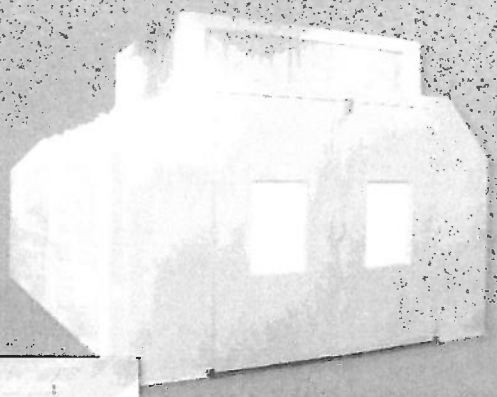
Semi Down Draft Spray Booths

- Heated or fresh air Semi Down Draft
- High velocity exhaust for accelerated dry time and rapid over spray removal



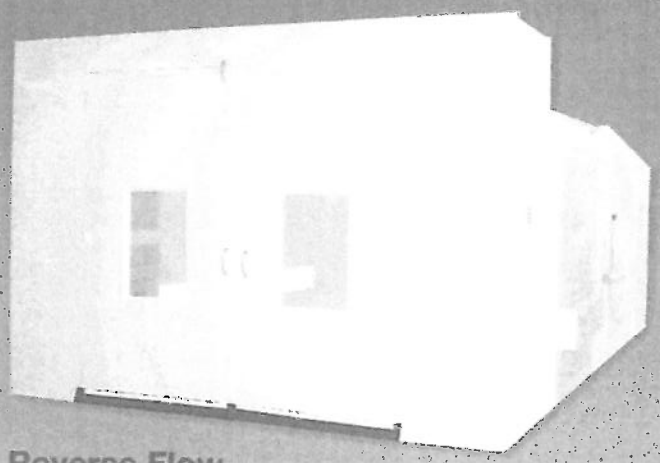


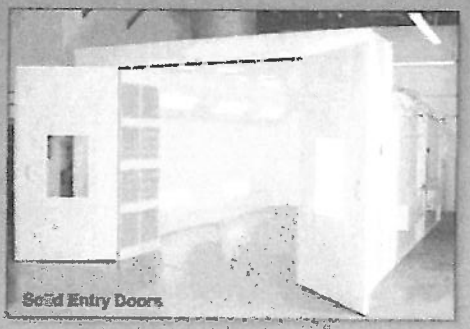




- Heavy duty hinges and hardware used on all booths

Reverse Flow Spray Booths





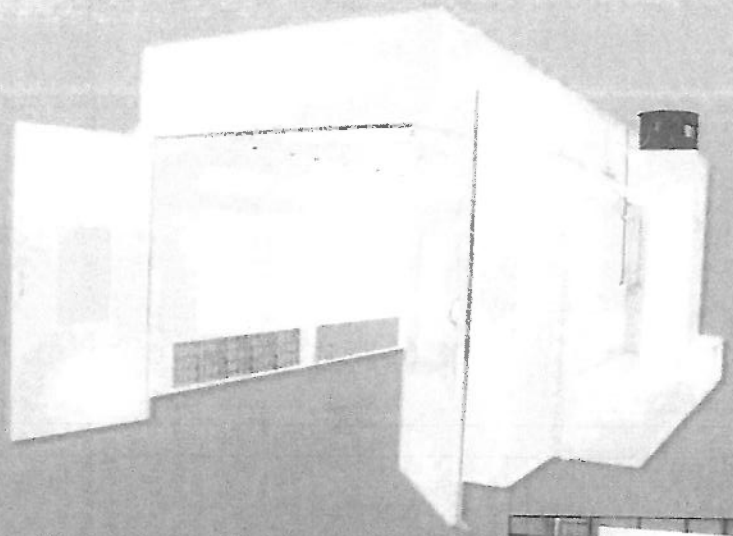
Reverse Flow

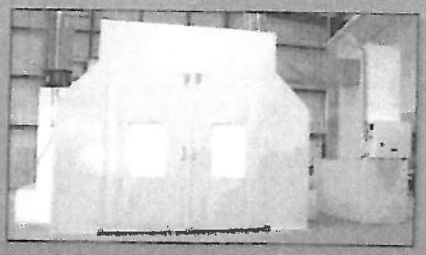
- Bridge tower exhaust at front of spray booth
- Rear wall intake at back of booth
- Heat system may be added for spray-cure

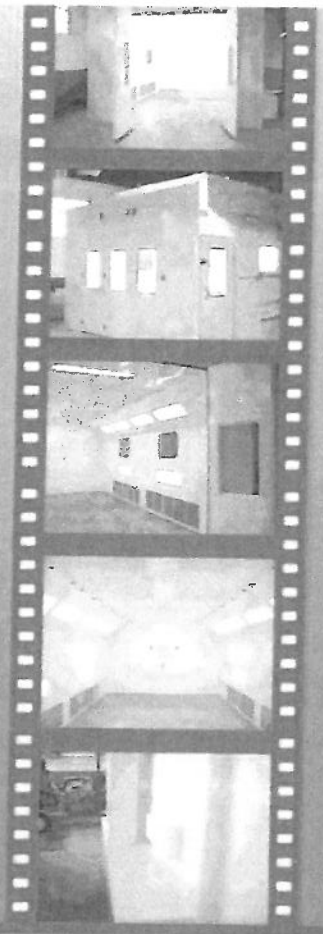
- Production spray and cure heat systems for automotive or industrial application

Direct Fire Heat Systems

Side Down Draft Spray Booths

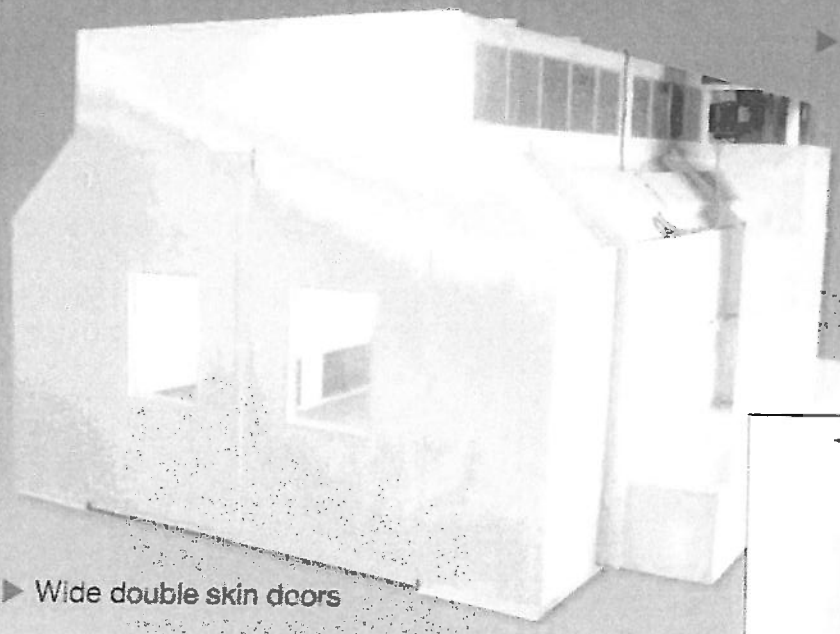




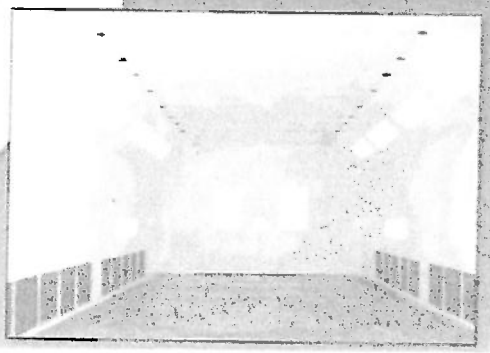


- High velocity side down draft for clean air spray finishing and rapid dry time
- Heated or fresh air available

Side Down Draft Spray Booths



- Plenum pre-filters cleans incoming air into spray booth
- Blanket ceiling filters with swing down hinges

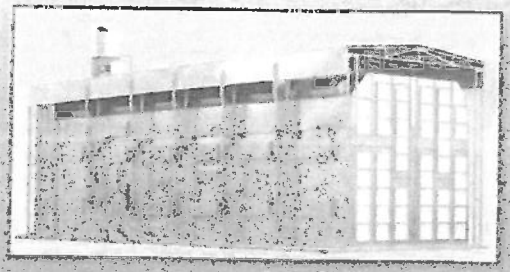


- Wide double skin doors

Truck Spray Booths

Out Door Truck Booth

- Built for outdoor use, integrated canopy built into spray booth

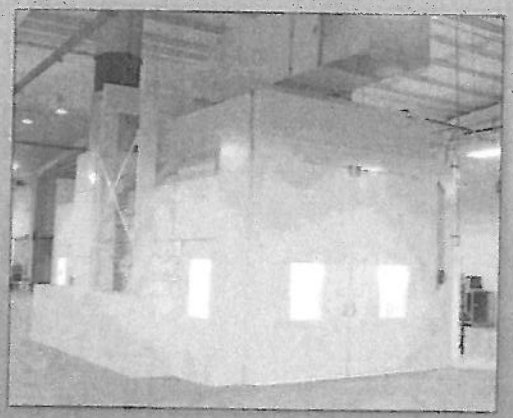


Large Out Door Spray Booth

Semi-Down Truck Booth

- Drive through design
- Heated or fresh-air capabilities
- Larger or custom sizes made to order

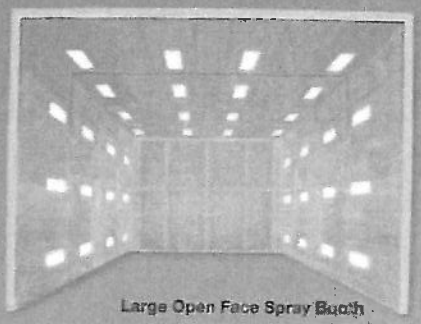
Semi-Down Truck Booth



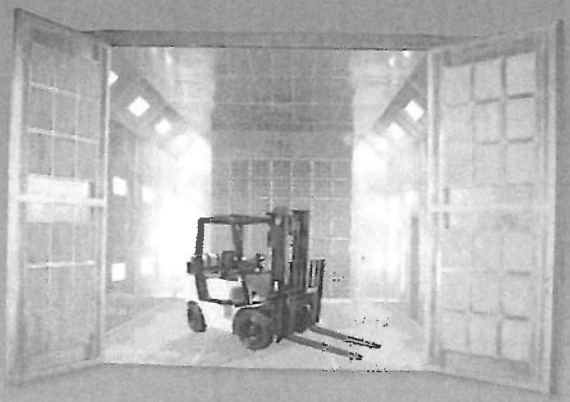
Heated Side Down Flow

Side Down Truck Booth

- Full production spray booth
- Roof mount heat system for space saving layout



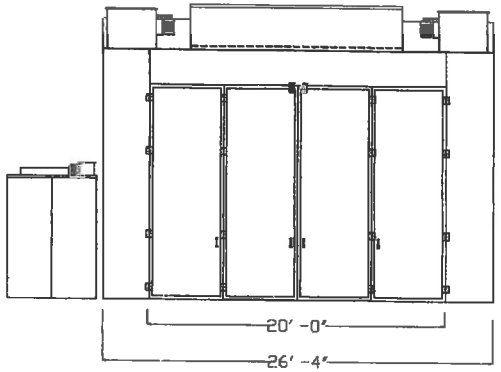
Large Open Face Spray Booth



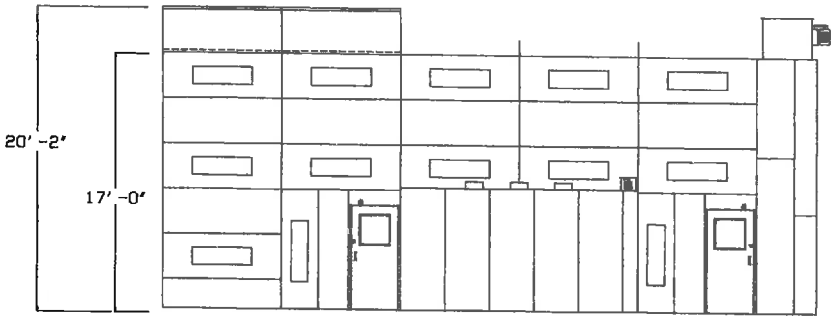
- Extra wide entry doors for large products
- Crane or hoist slots for product access
- Enclosed or open face to suit finishing requirements
- Custom designed and manufactured spray booths built for any application or processes

Large Production Spray Booths

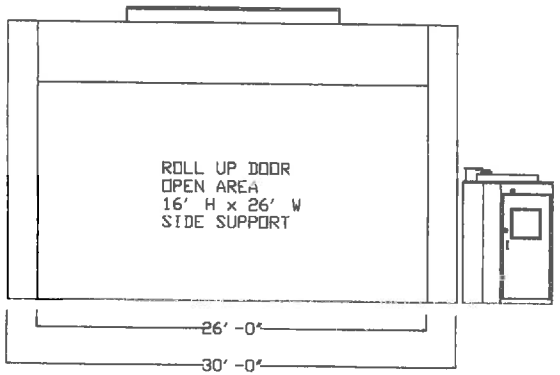
FRONT VIEW



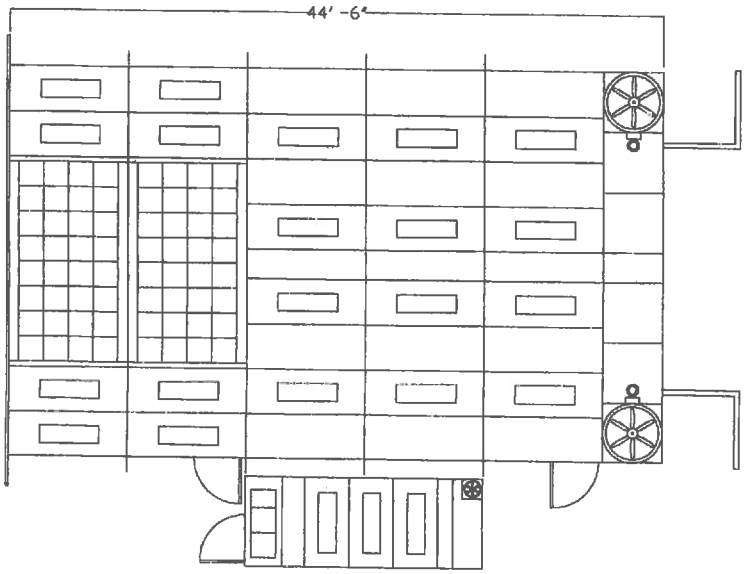
SIDE VIEW



REAR VIEW



TOP VIEW



BOOTH TYPE :
SL-SDD-264417-DT w/ MR-6168

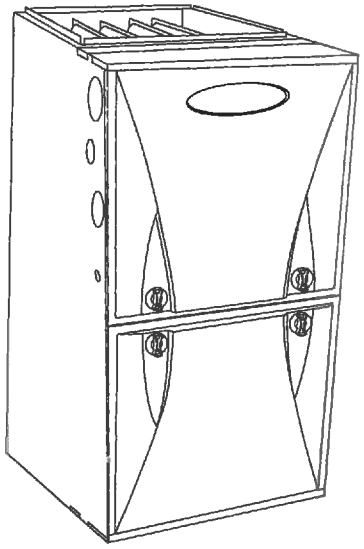
Sprayline Manufacturing Co.
(562) 941-5318
Automotive Truck & Industrial Spray Booths

SCALE: varies
DATE:
FILE NAME:

59SC5A
Comfort™ Series Single–Stage 4–Way Multipoise Condensing Gas Furnace Series 100

Carrier
turn to the experts

Product Data



A11263

The 59SC5 Multipoise Comfort Series Condensing Gas Furnace features energy efficiency of 95.5% AFUE gas efficiency and workhorse PSC blower motor. This gas furnace also features 4-way multipoise installation flexibility, and is available in nine model sizes. The 59SC5 can be vented for direct vent/two-pipe, ventilated combustion air, or single-pipe applications. All units meet California Air Quality Management District emission requirements, are design certified in Canada, and are certified for mobile/manufactured home use.

STANDARD FEATURES

- 4-way multipoise design for upflow, downflow or horizontal installation.
- Installation flexibility with a 360-degree rotating elbow.
- More than twelve different venting options, including optional through-the-cabinet downflow and horizontal venting.
- Ideal condensing furnace height 35" (889 mm) cabinet: short enough for taller coils, but still allows enough room for service.
- Silicon Nitride Power Heat™ Hot Surface Igniter.
- Aluminized-steel primary heat exchanger.
- Stainless-steel condensing secondary heat exchanger.
- High-quality corrosion-resistant prepainted steel cabinet with hemmed edges for safety.
- Factory-configured ready for upflow applications.
- Direct-vent/sealed combustion, single-pipe venting or ventilated combustion air.
- PSC blower motor, single-speed inducer motor, and single-stage gas valve.
- Self-diagnostics with SuperBrite LED.
- Approved for Twinning applications (040–12 through 120-20 sizes, only).
- Propane convertible (See accessory list).
- Approved for Manufactured Housing/Mobile Home applications (except 140,000 Btuh input) with MH accessory kit.
- Convenient Air Purifier and Humidifier connections.
- Residential installations may be eligible for consumer financing through the Retail Credit Program.
- Certified to leak 2% or less of nominal air conditioning CFM delivered when pressurized to 1–in. water column with all present air inlets, air outlets, and condensate drain port(s) sealed.

Comfort SERIES

Certified System ISO 9001 OMI-SAI Global

AHRI CERTIFIED

Use of the AHRI Certified Mark indicates a manufacturer's participation in the program. For verification of certification for individual products, go to www.ahridirectory.org.

DESIGN CERTIFIED

CERTIFIED

SAP ORDERING NO.	CASING DIMENSIONS (IN.)			RATED HEATING OUTPUT†		HEATING AIRFLOW		COOLING CFM @ 0.5 ESP (in WC)	MOTOR HP-SPEED	APPROX SHIP WEIGHT	
	H	D	W	(BTUH)	AFUE	CFM‡	Heating ESP (in. WC)			LB	(KG)
59SC5A040S14–10	35	29.5	14.2	39,000	95.5%	820	0.10	625-905	1/2 - 4	123	55.8
59SC5A040S17–12	35	29.5	17.5	39,000	95.5%	1000	0.10	650-1050	1/2 - 5	134	60.8
59SC5A060S14–10	35	29.5	14.2	58,000	95.5%	840	0.12	675-1130	1/2 - 4	127	57.6
59SC5A060S17–14	35	29.5	17.5	58,000	95.5%	980	0.12	650-1420	1/2 - 5	144	65.3
59SC5A080S17–16	35	29.5	17.5	78,000	95.5%	1040	0.15	810-1600	3/4 - 5	154	69.9
59SC5A080S21–20	35	29.5	21.0	78,000	95.5%	1695	0.15	1335-1970	1 - 5	162	73.5
59SC5A100S21–14	35	29.5	21.0	97,000	95.5%	1510	0.20	915–1545	1/2 - 4	169	76.7
59SC5A100S21–20	35	29.5	21.0	97,000	95.5%	1680	0.20	1345–2065	1 - 5	169	76.7
59SC5A120S24–20	35	29.5	24.5	117,000	95.5%	2245	0.20	1320-2105	1 - 5	186	84.4
59SC5A140S24–20	35	29.5	24.5	135,000	95.5%	2175	0.20	1290–2035	1 - 5	190	86.2

† Capacity in accordance with DOE test procedures. Ratings are position dependent. See rating plate.
‡ Heating CFM at factory default blower motor heating tap settings.
ESP – External Static Pressure

FEATURES AND BENEFITS

HYBRID HEAT® Dual Fuel system — This system can provide more control over your monthly energy bills by automatically selecting the most economical method of heating. With HYBRID HEAT components, our system automatically switches between the gas furnace and the single-stage electric heat pump as outside temperatures change to maintain greater efficiency and comfort than with any traditional single-source heating system. The heat pump also delivers high-efficiency cooling in the summer.

Power Heat™ Igniter — Carrier's unique SiN igniter is not only physically robust but it is also electrically robust. It is capable of running at line voltage and does not require complex voltage regulators as do other brands. This unique feature further enhances the gas furnace reliability and continues Carrier's tradition of technology leadership and innovation in providing a reliable and durable product.

Reliable Heat Exchanger Design — The aluminized steel, clam shell primary heat exchanger was re-engineered to achieve greater efficiency out of a smaller size. The first two passes of the heat exchanger are based on the current 80% product, a design with more than ten years of field-proven performance and success. These innovations, paired with the continuation of a crimped, no-weld seam create an efficient, robust design for this essential component.

The condensing heat exchanger, a stainless steel fin and tube design, is positioned in the furnace to extract additional heat. Stainless steel coupling box componentry between heat exchangers has exceptional corrosion resistance in both natural gas and propane applications.

4-Way Multipoise Design — One model for all applications – there is no need to stock special downflow or horizontal models when one unit will do it all. The new heat exchanger design allows these units to achieve the certified AFUE in all positions.

Direct or Single-pipe Venting, or Optional Ventilated Combustion Air — This furnace can be installed as a 2-pipe (Direct Vent) furnace, in an optional ventilated combustion air application, or in single-pipe, non-direct vent applications. This provides added flexibility to meet diverse installation needs.

Sealed Combustion System — This furnace brings in combustion air from outside the furnace, which results in especially quiet operation. By sealing the entire combustion vestibule, the entire furnace can be made quieter, not just the burners.

Monoport Burners — The burners are specially designed and finely tuned for smooth, quiet combustion and economical operation.

Bottom Closure — Factory-installed for side return; easily removable for bottom return. The multi-use bottom closure can also serve for roll-out protection in horizontal applications, and act as the bottom closure for the optional return air base accessory.

Blower Access Panel Switch — Automatically shuts off 115-v power to furnace whenever blower access panel is opened.

Quality Registration — Our furnaces are engineered and manufactured under an ISO 9001 registered quality system.

Certifications — This furnace is CSA (AGA and CGA) design certified for use with natural and propane gases. The furnace is factory-shipped for use with natural gas. A CSA listed gas conversion kit is required to convert furnace for use with propane gas. The efficiency is AHRI efficiency rating certified. This furnace meets California Air Quality Management District emission requirements.

SPECIFICATIONS

Heating Capacity and Efficiency			040-10	040-12	060-10	060-14	080-16	080-20	100-14	100-20	120-20	140-20
Input	High Heat	(BTUH)	40,000	40,000	60,000	60,000	80,000	80,000	100,000	100,000	120,000	140,000
Output	High Heat	(BTUH)	39,000	39,000	58,000	58,000	78,000	78,000	97,000	97,000	117,000	135,000
Efficiency		AFUE % (ICS)	95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5
Certified Temperature Rise Range °F (°C)		High Heat	40 - 70 (22 - 39)	35 - 65 (19 - 36)	40 - 70 (22 - 39)	40 - 70 (22 - 39)	40 - 70 (22 - 39)	40 - 70 (22 - 39)	40 - 70 (22 - 39)	40 - 70 (22 - 39)	40 - 70 (22 - 39)	45 - 75 (25 - 42)

Airflow Capacity and Blower Data		040-10	040-12	060-10	060-14	080-16	080-20	100-14	100-20	120-20	140-20
Rated External Static Pressure (in. WC.)	Heating	0.10	0.10	0.12	0.12	0.15	0.15	0.20	0.20	0.20	0.20
	Cooling	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Airflow Delivery @ Rated ESP (CFM)	High Heat	820	1000	840	980	1040	1695	1510	1680	2245	2175
	Cooling	905	1050	1130	1420	1600	1970	1545	2065	2105	2035
Cooling Capacity (tons)	400 CFM/ton	2	2.5	2.5	3.5	4	5	4	5	5	5
	350 CFM/ton	2.5	3	3	4	4.5	5.5	4.5	6	6	6
Direct-Drive Motor Type		Permanent Split Capacitor (PSC)									
Direct-Drive Motor HP		0.5	0.5	0.5	0.5	0.75	1	0.5	1	1	1
Motor Full Load Amps		6.2	6.8	6.2	6.8	7.9	13.8	6.5	13.8	14.1	14.1
RPM Range		500 -1150									
Speed Selections		4	5	4	5	5	5	4	5	5	5
Blower Wheel Dia x Width	in.	11 x 7	11 x 8	11 x 7	11 x 8	11 x 8	11 x 10	11 x 10	11 x 10	11 x 11	11 x 11
Air Filtration System		Field Supplied									
Filter Used for Certified Watt Data*		KGAWF**06UFR									

Electrical Data		040-10	040-12	060-10	060-14	080-16	080-20	100-14	100-20	120-20	140-20
Input Voltage	Volts-Hertz-Phase	115-60-1									
Operating Voltage Range	Min-Max	104-127									
Maximum Input Amps	Amps	6.8	8.3	7.0	8.4	9.6	14.5	7.6	14.6	14.9	14.9
Unit Ampacity	Amps	9.5	11.4	9.7	11.5	13.0	19.1	10.4	19.2	19.6	19.6
Minimum Wire Size	AWG	14	14	14	14	14	12	14	12	12	12
Maximum Wire Length @ Minimum Wire Size	Feet	39	32	38	32	28	30	35	29	29	29
	(M)	(11.9)	(9.8)	(11.6)	(9.8)	(8.5)	(9.1)	(10.7)	(8.8)	(8.8)	(8.8)
Maximum Fuse/Ckt Bkr (Time-Delay Type Recommended)	Amps	15	15	15	15	15	20	15	20	20	20
Transformer Capacity (24vac output)		40 VA									
External Control Power Available	Heating	27.9 VA									
	Cooling	34.6 VA									

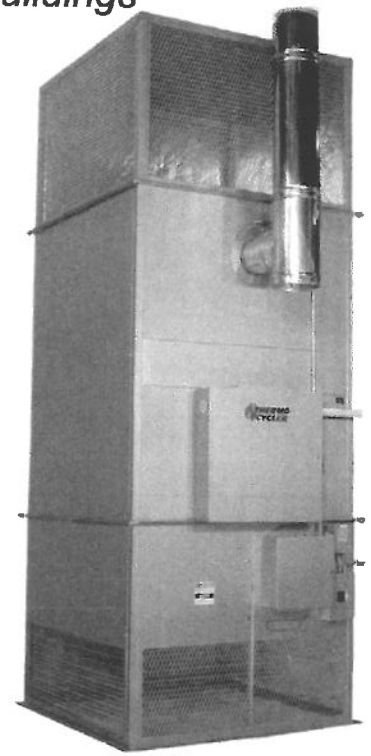
Controls		040-10	040-12	060-10	060-14	080-16	080-20	100-14	100-20	120-20	140-20
Gas Connection Size		1/2" - NPT									
Burners (Monoport)		2	2	3	3	4	4	5	5	6	7
Gas Valve (Redundant)	Manufacturer	White Rogers									
Minimum Inlet Gas pressure (in. wc)		4.5									
Maximum Inlet Gas pressure (in. wc)		13.6									
Gas Conversion Kit - Natural to Propane		KGANP50011SP									
Gas Conversion Kit - Propane to Natural		KGAPN42011SP									
Manufactured (Mobile) Home Kit		KGAMH0601KIT									N/A
Ignition Device		Silicon Nitride									
Limit Control		165	180	165	180	170	200	180	180	160	155
Heating Blower Control (Heating Off-Delay)		Adjustable: 90, 120, 150, 180 seconds									
Cooling Blower Control (Time Delay Relay)		90 seconds									
Communication System		*none*									
Thermostat Connections		Com 24V, R, W, G, Y									
Accessory Connections		EAC (115vac); HUM (24vac)									

* See Accessory List for part numbers available.

THE

THERMO-CYCLER® GTC-480M

The Energy Efficient System for Comfort Heating and Heat Recovery in Commercial and Industrial Buildings



STANDARD FEATURES

- Heavy duty welded steel construction.
- Compact design requires little floor space.
- Control cabinet contains all factory mounted controls.
- Locking enclosures prevent unauthorized entry.
- Low pressure belt driven fan delivers air quietly and efficiently.
- Premium efficiency fan motor reduces electrical consumption.
- Energy management setback controls for efficient operation.
- Fan assisted combustion system for improved system efficiency.
- Burner air collar for direct introduction of outside combustion air.
- *Octatherm* heat exchanger with stainless steel primary chamber.
- 10 Year Limited Heat Exchanger Warranty

SPECIFICATIONS:

UL LISTED

Unit Dimensions	60" x 60" x 12'0"
Ship Weight	Approx. 1920 lbs in 3 Sections
Electrical	Premium Efficiency 1 ½ Hp, Totally enclosed motor
Gas Burner.....Direct Spark	Wayne Model EHG - 550 Mbh Input
Intermit Pilot	Midco Economite® - 580 Mbh Input
Gas Pressure Required	6 to 14 in. W.C. (Natural), 1 ¼" Piping Connection
Flue Collar	8"⌀ approximately 8'8" above floor
Suggested Flue Venting Material	Building Heating Appliance Chimney
Controls	Factory mounted including programmable setback

THERMO CYCLER®

THERMO-CYCLER INDUSTRIES, Inc.
PO Box 22 • 111 Hamilton St.
Union Mills, Indiana 46382-0022
Phone: (219) 767-2990 Fax: (219) 767-2991

www.thermocycler.com

(TC102GR5)

GTC-480M
BURNER SPECIFICATIONS

THERMO-CYCLER® MODEL GTC-480MD

WAYNE GAS BURNER

MODEL EHG

- Direct Spark Ignition
- 550 MBH Input Capacity
- Gas Pressure Required:

  Natural: 6" w.c. to 14" w.c.
  Manifold Press: 3.8"w.c. (550Mbh)

  Propane: 11" w.c. to 14" w.c.
  Field Conversion Required

- 120 Volt Power/ 24 Volt Control
- Honeywell S89F Primary Safety Control
  34 Second Prepurge, 4 Second Lockout
- Robertshaw Unitrol 7000HC Gas Valve
- 1/5 HP, 3450 RPM Blower Motor
- Flue Gas Flow - Apprx. 125 SCFM
- Suggested Flue Venting Material - Building Heating Appliance Chimney

THERMO-CYCLER® MODEL GTC-480MI

MIDCO GAS BURNER

ECONOMITE® MODEL RE-4700BA

- Intermittent Spark Ignited Pilot
- 580 MBH Input Capacity
- Gas Pressure Required:

  Natural: 6" w.c. to 14" w.c.
  Manifold Press: 4.0" w.c.(580Mbh)

  Propane: 11" w.c. to 14" w.c.
  Field Conversion Required

- 120 Volt Power/ 24 Volt Control
- Honeywell S8680J Primary Safety Control
  30 Second Prepurge, 15 Second Lockout
  100% Safety Pilot Gas Shut-off
- Robertshaw Unitrol 7000HC Gas Valve
- 1/6 HP, 3450 RPM Blower Motor
- Flue Gas Flow - Apprx. 130 SCFM
- Suggested Flue Venting Material - Building Heating Appliance Chimney

ADDITIONAL REQUIREMENTS & INFORMATION

THERMO-CYCLER® GTC-480M

Additional items which are <u>not</u> included as a part of the quotation but which may be required are:

<u>A) INSTALLATION</u> - Labor and equipment will be needed for unloading and assembly of equipment. Upon receipt, carefully examine the equipment for any damage which may have occurred during transportation. If damage has occurred, notify the transportation company immediately and file any necessary damage claims within the required time limit.

The standard unit will be shipped on two pallets and protected with a clear plastic stretch wrap covering. Any additional accessories such as an extension or a Thermo-Mixer® will be shipped on separate pallets. The top discharge section will be bolted to the fan base section for shipping purposes. The center heat exchanger section is shipped with the burner mounted in place. The total shipping weight is approximately 1800 lbs and the heaviest piece is approximately 910 lbs. A lifting lug is provided on the top of the heat exchanger for easier handling during installation.

The normal setting time would be 3-6 man-hours, although the actual time will vary with job conditions, available equipment, and labor crew skill. All nuts, bolts, and washers required for assembly are provided. The unit must be set on a level floor which is structurally capable of supporting the unit.

<u>B) ELECTRICAL POWER WIRING</u> - An electrical power circuit, with overcurrent protection must be provided to unit and connected to the wiring leads at the control panel. Circuit must be properly sized and grounded in accordance with ANSI/NFPA-70 and applicable code requirements. The transformer and operating controls are factory mounted. Reconnection of the wiring plug termination on the flexible conduit from the control panel to the junction in the burner enclosure will be required. Available voltages, minimum circuit ampacities, and maximum protective device sizes for the GTC-480 are:

Model E2	230V/1Ø	1½ HP	MCA: 15.0 Amps	MPD: 20 Amp
Model E3	208V/3Ø	1½ HP	MCA: 12.0 Amps	MPD: 15 Amp
Model E3T	230V/3Ø	1½ HP	MCA: 9.0 Amps	MPD: 10 Amp
Model E4	460V/3Ø	1½ HP	MCA: 4.0 Amps	MPD: 6 Amp

<u>C) NATURAL GAS PIPING</u> - The Thermo-Cycler GTC-480M requires natural gas with piping adequately sized to provide **6"w.c. to 14"w.c.** at the burner inlet. Burner gas consumption of **GTC-480M is up to 580 CFH**. For gas line pressure exceeding 14" w.c., an approved gas pressure regulator must be provided to reduce the outlet gas pressure to less than 14" w.c. at the unit. A manual shutoff valve should be provided at the unit as shown on the gas piping diagram provided with the unit or in accordance with local codes.

(OVER)

D) FLUE GAS VENTING - An approved flue gas vent system must be provided in accordance with all applicable codes and regulations. **A UL Listed Building Heating Appliance Chimney rated for 1000°F continuous operation would be acceptable for the GTC-480M.** Type "B" Flue Vent is not recommended for the GTC-480M. The Thermo-Cycler GTC-480M has an 8" diameter flue collar located approximately 8' 8" above floor level. A capped tee should be installed at the bottom of the stack for access and inspection. Maintain clearance to combustible material as required by the flue venting system selected and terminate vent in accordance with vent system manufacturer's recommendation.

E) COMBUSTION AIR INTAKE - A 4" x 14" collar is provided on the top of the burner enclosure for combustion air intake. Outside combustion air should be ducted to the unit if the building is operating under a negative pressure condition, if the air is dirty or contaminated, or if required by local codes or regulations.

F) FRESH AIR VENTILATION - Additional exhaust or makeup air may be required by local codes or regulations to maintain acceptable indoor air quality.

G) CODE COMPLIANCE & REGULATIONS - The specifier and/or purchaser has the final responsibility for determination of suitability for the fitness of purpose, acceptance by the local authorities having jurisdiction, and/or the approval of the fire insurance carrier regarding the application of the Thermo-Cycler system for this building and the intended occupancy.

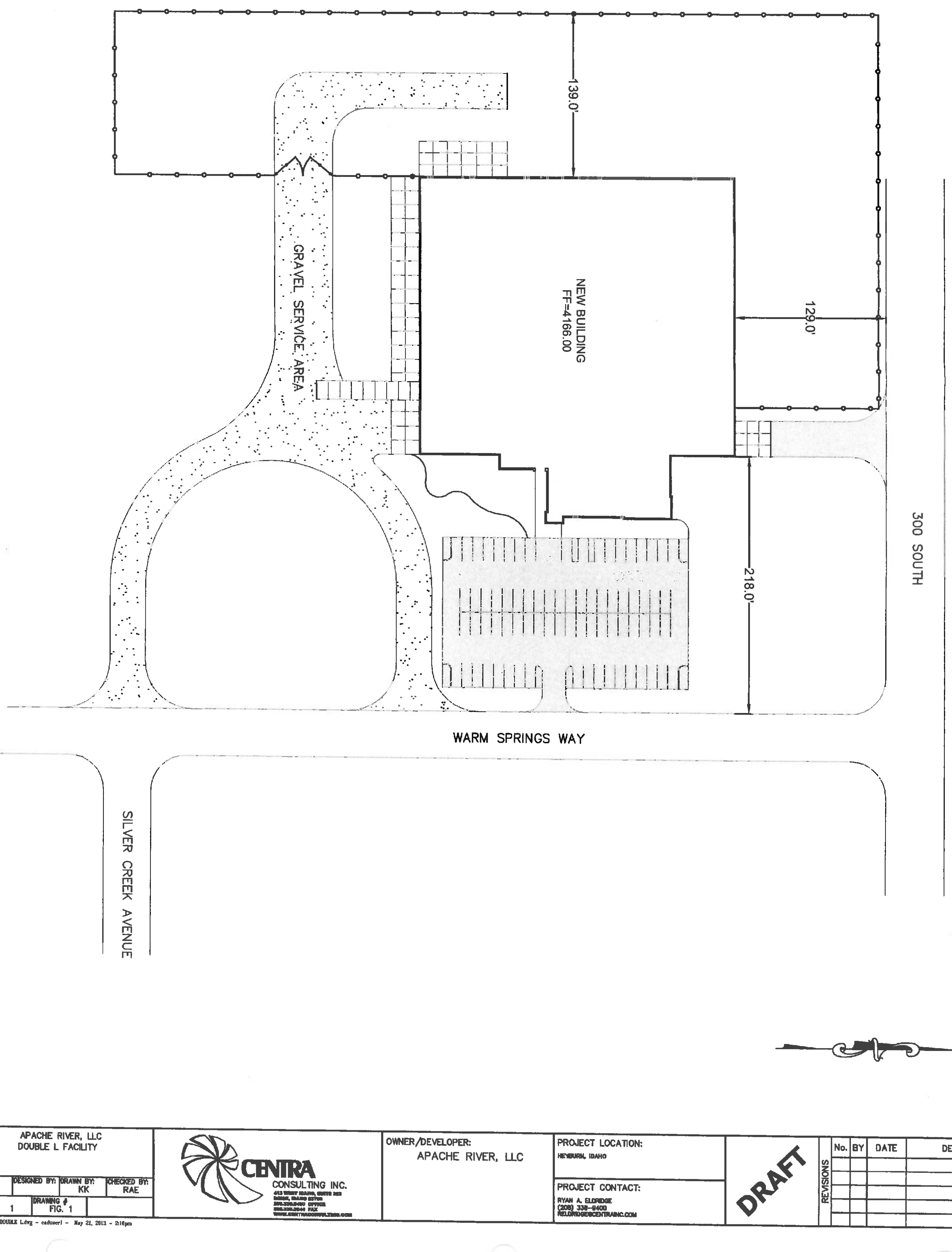
H) EMERGENCY SHUTDOWN - The Thermo-Cycler GTC-480M has an air distribution capacity greater than 10,000 cubic feet per minute (cfm). Local codes may require the unit to be shutdown in the event of a fire. Unit shutdown may be controlled by the building fire protection system or by a separate smoke detection system. The specifier and/or purchaser has responsibility to verify code requirements with the local authority having jurisdiction and to provide the appropriate controls required.

I) STARTUP & TESTING - The Thermo-Cycler GTC-480M has been test fired and adjusted for burner operation efficiency under factory conditions. The inspection, startup, and final adjustment after installation is required by a qualified heating service technician for verification of proper system performance under actual jobsite operating conditions. Use of a combustion analyzer for startup and maintenance is strongly recommended.

J) ADDITIONAL INFORMATION - Additional information on installation and maintenance for the Thermo-Cycler GTC-480M is available in the operation and maintenance manual. The manual is shipped in the control cabinet of each Thermo-Cycler.

APPENDIX E

PLOT PLAN



* NOT TO SCALE

TITLE:	APACHE RIVER, LLC DOUBLE L FACILITY		
REVISION A	DESIGNED BY:	DRAWN BY: KK	CHECKED BY: RAE
SHEET # 1	DRAWING # FIG. 1		

CENTRA CONSULTING INC.

OWNER/DEVELOPER:
APACHE RIVER, LLC

PROJECT LOCATION:
HEYBURN, IDAHO

PROJECT CONTACT:
RYAN A. ELDRIDGE
(208) 338-9400
RELDRIDGE@CENTRAINC.COM

DRAFT

REVISIONS

No.	BY	DATE	DESCRIPTION

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